

SUMMER 2005

Harvard Medical

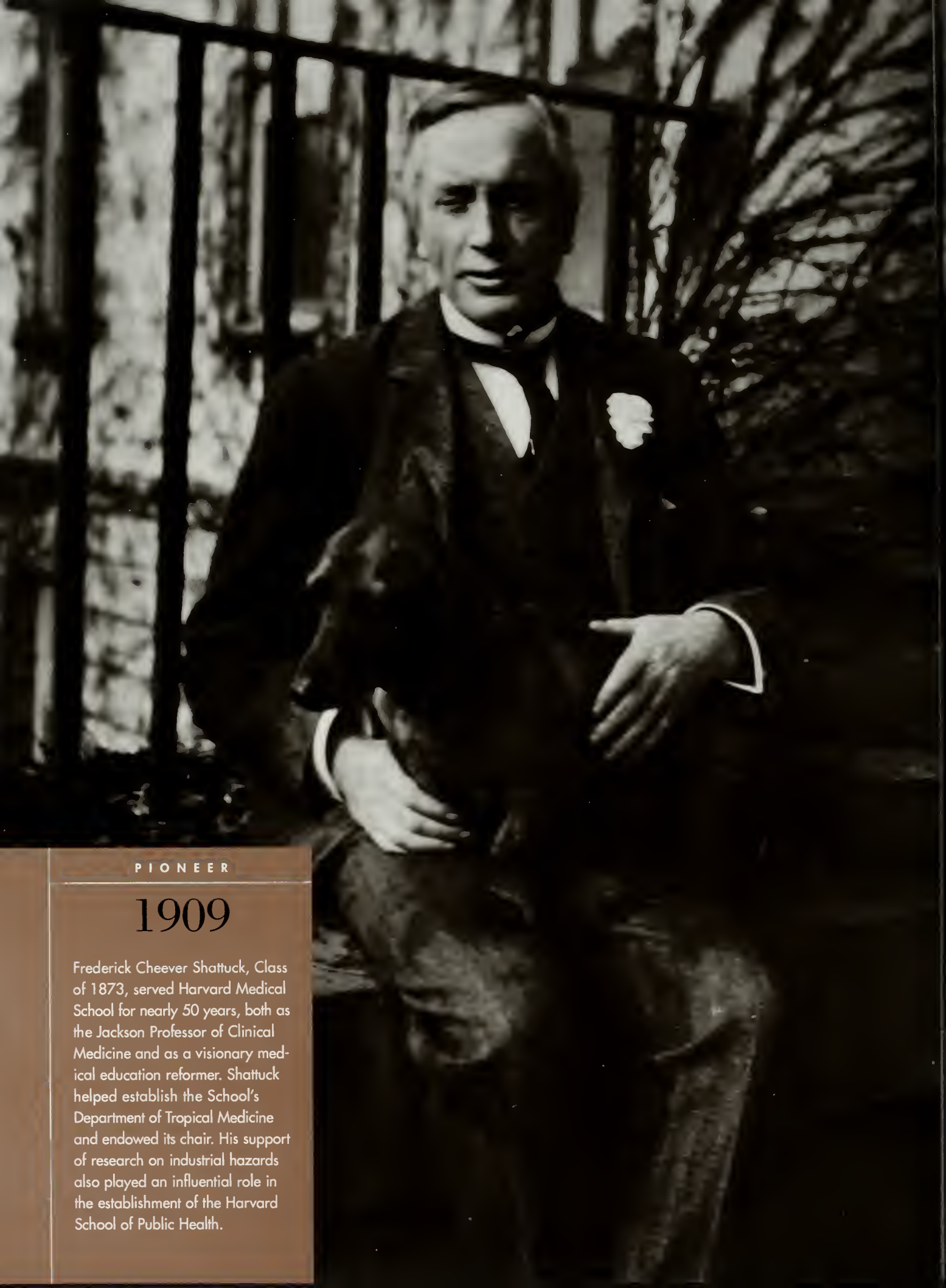
ALUMNI BULLETIN

With clinical encounters increasingly depersonalized, surgeon Atul Gawande highlights the value of simple human exchanges.

TALKING TO STRANGERS

*Atul A. M.D., M.S.
Dept of Surgery*





PIONEER

1909

Frederick Cheever Shattuck, Class of 1873, served Harvard Medical School for nearly 50 years, both as the Jackson Professor of Clinical Medicine and as a visionary medical education reformer. Shattuck helped establish the School's Department of Tropical Medicine and endowed its chair. His support of research on industrial hazards also played an influential role in the establishment of the Harvard School of Public Health.

CONTENTS



32

DEPARTMENTS

Letters.....	3
Pulse.....	4
All new: a national mental illness survey; a medical education dean; a series of consumer health books; a finding about violence among adolescents; the name of a history of medicine resource at Harvard; hospital rankings; and websites on culturally competent care and stem cell research	
Editorial.....	7
When parents are skeptical about vaccinating their children. <i>by Nicole Martin</i>	
Curbside Consultation.....	8
Has the blurring of commercial and academic interests helped or hurt patients? <i>by Richard Wurtman</i>	
Bookmark.....	10
A review by Elissa Ely of <i>Franz Boas: An Illustrated Biography</i>	
Bookshelf.....	11
Benchmarks.....	12
New approaches to old maladies	
Class Notes.....	58
In Memoriam.....	61
<i>Fred S. Rosen</i>	
Obituaries.....	62

CLASS DAY: SECRETS TO DOCTORING SUCCESS

Reinventing the Wheel.....16

How can doctors avoid becoming white-coated cogs in the machinery of medicine?

by ATUL GAWANDE

Back to the Future.....20

A young physician's lighthearted take on an imaginary medical forbear highlights the timeless nature of the School's mission.

by JARED KESSELHEIM

Luck of the Draw.....22

A new graduate appreciates the good fortune that led him to HMS—and the wisdom of those who helped him through it.

by GREGORY FELDMAN

ALUMNI DAY: COMMUNICATION IN MEDICINE

Listening With Our Eyes.....26

Technologically correct medicine cannot trump the primacy of the bond between physicians and patients.

by CHARLES J. HATEM

Truth and Consequences.....32

On the heels of selective reporting of data by pharmaceutical companies, a medical editor calls for transparency in clinical trials.

by JEFFREY M. DRAZEN

The Data Game.....36

A physician-journalist explores the impact of the evolution of media on the public's access to medical information.

by TIMOTHY JOHNSON

REPORT FROM THE DEAN

Map of the World.....40

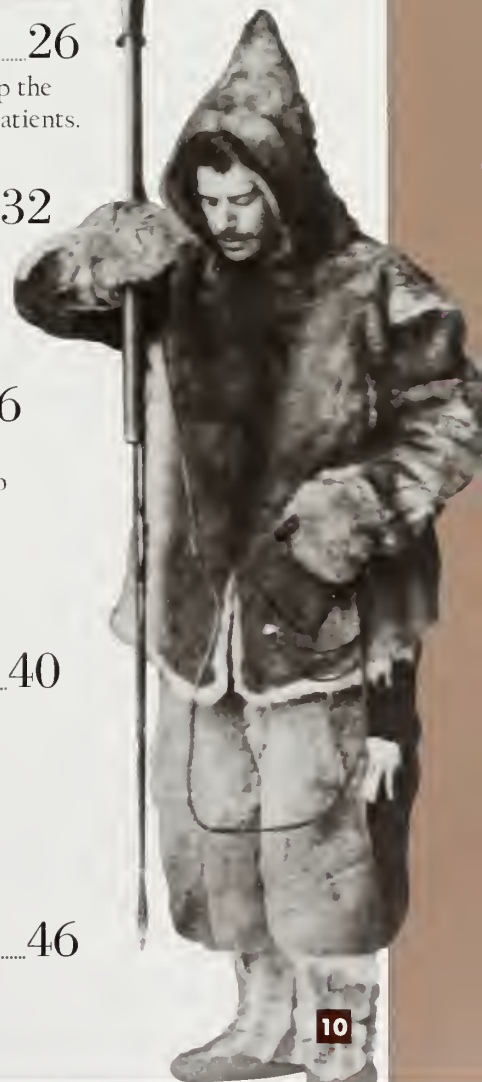
The dean of HMS explains how a world newly flattened by technology is giving rise to fresh dimensions in medicine.

by JOSEPH B. MARTIN

REUNION REPORTS

Reports from the Classes.....46

Cover photograph by Jodi Hilton



10

In This Issue

EVERY JUNE THE HARVARD MEDICAL SCHOOL COMMUNITY GATHERS TO congratulate another class of graduating physicians, and itself, on a job well done—deservedly so. Yet complacency takes up a remarkably small fraction of these exercises. Medicine is not by nature a complacent undertaking, and the current environment of medicine hardly fosters that state of mind.

To take the most obvious case in point, physicians are now caught in the middle of a three-way struggle between those who receive care, those who pay for it, and those who produce and market the chemicals and machinery required to provide care. As in any struggle, knowledge is power, but a little knowledge may be a dangerous thing. Thus, both the ownership of medical information and the management of that information have become fault lines in health care in this country.

In this issue, Jeffrey Drazen '72, editor-in-chief of the *New England Journal of Medicine*, provides an account of the role played by half-truths and limited access to trial results in the marketing of COX-2 inhibitors. More broadly, Drazen addresses the underlying question of who actually owns the information provided by volunteers in clinical trials. He is, in essence, demanding an end to the private ownership of the data these volunteers yield.

Timothy Johnson takes on the question of what happens when information is, perhaps, excessively free. Instant reporting, on-demand news, and unfiltered facts, factoids, and falsehoods are all becoming realities thanks to new technologies. What is easy to foresee is how the requisite hardware will evolve. Less obvious is whether evidence of intelligent design will appear in the content that it delivers. To be useful, information needs brakes and filters. How will they be inserted into tomorrow's medical news?

Within a single institution—namely HMS—the acceleration of information flow permitted by new technologies appears to be a generally Good Thing. As Dean Joseph Martin reports in his survey of changes at the School, dependence on paper-based records and communication is waning as electronic libraries and intranet feedback are waxing. Both the effectiveness and the economy of communication appear to be benefiting as a result.

But Charles Hatem '66 and Atul Gawande '94 caution us not to be seduced into thinking that communication with a patient can be improved by any technology that fails to take account of the crucial clinical act of listening, on all the available channels, to the signals the patient is sending. The messages may be coded or inarticulate, but they must be heard and heartfelt if the physician is true to his or her calling. This archaic, delicate, improbable, and inefficient but profoundly effective human activity seems ever more threatened. But somewhere away from the din of advertising and the scrimping of third-party payers we can only hope there will continue to be a way for one person to listen seriously to another in the act we think of as caring for the patient.

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The Outsiders

I read with great interest "Pride and Prejudice," the feature on the history of African Americans at HMS, in the winter issue of the *Bulletin*. Prejudice was a way of life years ago, and unfortunately it remains with us in various forms.

The Irish Catholics in Boston—before they eventually took over local politics—had to deal with the "Irish need not apply" phenomenon. I believe that Catholics and Jews neither advanced in academic positions at HMS nor were selected in appropriate numbers until the late 1950s. It is my understanding that the first Catholic to be made a full professor at HMS was appointed in 1959. He was Thomas Fitzpatrick, my mentor in dermatology at Massachusetts General Hospital. I also believe that the School's first Jewish full professor, other than the ones at Beth Israel Hospital, was Morton Swartz '47 at Massachusetts General in 1960.

This not-so-subtle prejudice was certainly not confined to HMS; for years four of the twenty-four students annually admitted to Dartmouth Medical School were Jewish—never more, never fewer. That was the way it was, and no one said a hell of a lot about it.

WILLIAM GALLAGHER '60
BANGOR, MAINE

Southern Discomfort

When I entered HMS in the fall of 1933, an unusual incident opened my eyes to the nature of prejudice. During a microbiology course, the class was awaiting the arrival of a lecturer who was scheduled to teach us about various syphilis tests. When Professor William Hinton '12 walked into the room, one of the students rose from his seat, descended the steps, and dramatically strode out of the room—by the opposite door. I felt bewildered.

Later I learned that the student, a southerner, could not tolerate being



taught by an African American. Had Nora Nercessian's book on the history of students of African descent at HMS been available then, I might have understood what was happening. Thanks to Eve Higginbotham '79 for her good article.

HENRY H. WORK '37
BETHESDA, MARYLAND

Charged with an Error

Although eight years in Boston immunized me to its sports parochialism to some extent, I was nonetheless astounded to read in a caption in the spring issue that Ted Williams was "the only player ever to bat higher than .400 in a season." In fact, other players—none of whom played for the Red Sox—achieved this feat. Kindly advise your copyeditors not to let the 2004 season go to their heads.

HARVEY J. WEISS '55
HAWORTH, NEW JERSEY

It's clear that your copyeditor does not share Ted Williams's exceptional eye-

sight, in describing him as the only player ever to bat higher than .400 in a season. The Splendid Splinter was the most recent player to do so, in 1941. Modern tendencies, including skilled relief pitching, likely make that milestone as difficult to achieve as Joe DiMaggio's 56-game hitting streak, also established in 1941.

LEE J. BROOKS, MD
PHILADELPHIA, PENNSYLVANIA

I greatly enjoyed the discussion of the relationship of vision to artistic and athletic performance in the spring issue. Some consider exceptional visual acuity to be a common trait among accomplished athletes, most famously Ted Williams. It is said that his vision and discipline were so legendary that umpires would not call third strikes on him, perhaps acknowledging that if a pitch had been a strike Ted would have swung his bat.

Great as he was, Ted was not the only player to hit over .400 in a season. He was the last player to do so, hitting .406 by getting six hits in eight at-bats in a doubleheader on the final day of the 1941 season. But Teddy Ballgame may truly retain his status as the last player to do it, as his feat is now 64 years old.

JOHN J. PIPPIN, MD
DALLAS, TEXAS

Editor's note: The caption accompanying the photo of Ted Williams in our spring issue should have described Teddy Ballgame as the last player in baseball's modern era to finish a season with a batting average higher than .400. The *Bulletin* regrets having dropped the ball.

The Bulletin welcomes letters to the editor. Please send letters by mail (Harvard Medical Alumni Bulletin, 25 Shattuck Street, Boston, Massachusetts 02115); fax (617-384-8901); or email (bulletin@hms.harvard.edu). Letters may be edited for length or clarity.

Early Warning System

THE CONCLUSIONS OF THE LATEST U.S. mental health tracking survey show mixed results on progress following a decade's worth of advances in therapeutics, awareness campaigns, and greater health plan coverage of mental health care. The survey, known as the National Comorbidity Survey Replication (NCS-R), is the most recent in a series taken every ten years to assess the mental health of the country.

In a set of four papers published in the June issue of *Archives of General Psychiatry*, the survey authors report that the percentage of people receiving mental health treatment has doubled in the last decade; that about half of all Americans will experience a mental health disorder at some time in their lives, though most disorders will be mild; that these disorders often go untreated; and that even when treatment does occur, the care provided likely will not meet recommended guidelines. The study also found that mental disorders gain the strongest foothold among young people.

"Given the enormous personal and societal burdens of mental disorders,



PHOTO: M. AN WORTH ALUMNA

these observations should lead us to direct a greater part of our thinking about mental health interventions for children," said Ron Kessler, HMS professor of health care policy, who direct-

ed both the NCS-R and the original survey. "We should focus on early interventions aimed at preventing progression of primary disorders and the onset of multiple disorders." ■



PHOTO: LIZA GREEN

Keeping the Dean in Dienstag

JULES DIENSTAG, HMS PROFESSOR OF MEDICINE AT MASSACHUSETTS GENERAL HOSPITAL, has been appointed the new dean for medical education at HMS. From 1998 to 2003, Dienstag served as the School's faculty associate dean for admissions, and in September 2003, he was named its associate dean for academic and clinical programs.

Since November 2004, Dienstag has aided Joseph Martin, dean of HMS, in guiding the Program in Medical Education and the Medical Education Reform Initiative. In revamping medical education, he has focused on community-wide involvement, meeting with basic science and clinical department heads and the chairs of the departmental executive committees. He also has brought together the preclinical and basic science course directors and core clerkship directors to engage them in reform efforts and listen to their thoughts about the proposed changes.

"We are fortunate," Dienstag says, "to have so many dedicated teachers on our faculty, and I am excited about working with them to realize our vision for enhancing the medical education experience of our students." ■

Consumers Alerted

THE HARVARD HEALTH PUBLICATIONS Division of HMS recently inaugurated its partnership with McGraw-Hill by issuing six consumer health books. Begun last year, the joint program will produce about ten consumer health books a year by HMS faculty physicians.

"For 30 years, Harvard Medical School has included education of the public as part of its educational mission," said Anthony Komaroff, editor-in-chief of Harvard Health Publications and an HMS professor of medicine at Brigham and Women's Hospital. "Our faculty have an extraordinary breadth and depth of knowledge about maintaining good health and treating disease, and many are skilled at conveying their knowledge to a lay audience. HMS is reaching millions of people with high quality health information."

Among the first books to be published, *Living Through Breast Cancer* by Carolyn Kaelin, director of the Comprehensive Breast Health Center and HMS assistant professor of surgery at Brigham and Women's Hospital, draws on the author's experiences both as a breast cancer surgeon and a breast cancer patient.

David M. Nathan, director of the Diabetes Center at Massachusetts General Hospital, has demonstrated that lifestyle changes can go a long way toward prevention and treatment. In *Beating Diabetes*, he and the chief dietitian at the center, Linda Delahanty, outline a program of exercise and diet to sharply improve glucose tolerance and prospects for long-term health.

High cholesterol, a major risk factor for cardiovascular disease, and ways to manage it are the subjects of Mason Freeman's *Lowering Your Cholesterol*. Freeman is chief of the Lipid Metabolism Unit at Massachusetts General Hospital.

Research on pain associated with disease by Ralph Metson and colleagues revealed that people with chronic sinusitis



Deadly Exposure

IN A STUDY DESIGNED TO ISOLATE THE ROOT CAUSES OF VIOLENT BEHAVIOR, HMS researchers have found that young teens who witnessed gun violence were more than twice as likely as nonwitnesses to commit a violent crime themselves within two years. The research appears in the May 27 issue of *Science*.

The investigation, a five-year project that included interviews with more than 1,500 children and teenagers from 78 Chicago neighborhoods, used statistical advances and extremely detailed information about the study subjects to go beyond correlations and associations and estimate causation.

By grouping together and comparing teens with similar likelihood of exposure, some of whom were and some of whom were not witnesses to violence, the researchers were able to isolate the independent contribution made by seeing gun violence. And it turned out to be large, swamping previously identified influences such as poverty, drug use, and being raised by a single parent.

To address violence effectively, says Felton "Tony" Earls, HMS professor of social medicine and principal investigator of the study, the challenge for social medicine researchers is to define its fundamental nature—is it a product of families, akin to a hereditary disorder? Or is it like an environmental contaminant, lurking in some communities and leaving others unscathed? Based on this study's results, showing the importance of personal contact with violence, Earls believes the best model may be that of a socially contagious disease.

"Preventing one violent crime may prevent a downstream cascade of 'infections,'" Earls says. "And the lessons learned in Chicago should be broadly applicable."

The study was part of the Project on Human Development in Chicago Neighborhoods, a major interdisciplinary initiative aimed at deepening society's understanding of the causes and pathways of juvenile delinquency, adult crime, substance abuse, and violence. ■

Tai Viinikka is a former intern at Focus.

reported higher levels of pain than those with heart disease, lower back problems, and other conditions. Such findings by Metson, an HMS clinical professor of otology and laryngology at the Massachusetts Eye and Ear Infirmary, form the basis of the book *Healing Your Sinuses*, which addresses quality of life, new treatment techniques, and computer-enhanced sinus surgery.

Focusing on another quality of life issue, loss of memory, Aaron Nelson, HMS

assistant professor of psychology in the Department of Psychiatry at Brigham and Women's Hospital, describes the latest research on preventing memory loss in his book *Achieving Optimal Memory*.

Finally, in *Eat, Play, and Be Healthy*, W. Allan Walker, director of the HMS Division of Nutrition, guides parents in forming healthy eating habits for their children through the stages of growth from birth to eight years old. ■

Don't Know Much About History?



THE COUNTWAY LIBRARY'S RARE BOOKS

and Special Collections Department recently changed its name to the Center for the History of Medicine. The new name reflects the breadth of archives that contain virtually all of the great works in the history of medicine as well as many lesser known, fascinating materials. At any given time, scholars may be encountered delving into such treasures as the George Burgess Magrath Library of Legal Medicine, the collections forming the National Archives of Plastic Surgery, the Hyams Collection of Hebraic Medical Literature, or more than 800 books printed before 1501. ■

Diverse Resources

HARVARD MEDICAL SCHOOL HAS LAUNCHED A WEBSITE THAT WILL ALLOW USERS to share resources and exchange information on initiatives in cross-cultural education and training. The Culturally Competent Care Education Committee at HMS created the site in collaboration with the Office for Diversity and Community Partnership.

Culturally competent care involves tailoring delivery to meet patients' social, cultural, and linguistic needs in an effort to improve outcomes and eliminate disparities in health care. Cultural competence education has been deemed critical in preparing doctors to meet the health needs of a growing, diverse population, and the Liaison Council on Medical Education now has standards that require cultural competence education as part of undergraduate medical curricula.

The Institute of Medicine report "Unequal Treatment" recommended cultural competence education as a method of improving doctor-patient communication and eliminating racial and ethnic disparities in health care. The report stated that racial and ethnic minorities receive lower quality health care, even when access to insurance and socioeconomic status are controlled.

In addition to race and ethnicity, lower quality health care is often associated with a person's national origin, limited English proficiency, religion, age, social class, gender, sexual orientation, physical or mental disability, immigration status, and obesity.

Called the Culturally Competent Care On-Line Resource Center, the site serves students, faculty, staff, and the public. Among the educational resources that it provides are a primer covering the principles and practical applications of cross-cultural care, a compilation of case studies, and links to other organizations' teaching curricula. Visit www.hms.harvard.edu/cccec to learn more about the On-Line Resource Center. ■

Institutional Divvying

ONCE AGAIN MASSACHUSETTS GENERAL

Hospital (MGH) and Brigham and Women's Hospital (BWH) have earned spots on the *U.S. News & World Report* annual Honor Roll of America's Best Hospitals. MGH ranked third nationally, while BWH ranked 12th among the 16 hospitals on the list.

MGH also was among the top ten in 12 specialties, including psychiatry for the tenth year in a row, cardiology, digestive disorders, geriatrics, gynecology, hormonal disorders, kidney disease, neurology and neurosurgery, orthopedics, respiratory disorders, rheumatology, and urology.

BWH ranked in the top ten in six categories—cardiology, digestive disorders, gynecology, hormonal disorders, kidney disease, and rheumatology—and in the top 50 in the categories of cancer, geriatrics, neurology and neurosurgery, orthopedics, respiratory disorders, and urology.

Among the other Harvard-affiliated institutions, Children's Hospital ranked second in pediatrics. Massachusetts Eye and Ear Infirmary ranked second in ear, nose, and throat, and fourth in ophthalmology. Dana-Farber Cancer Institute ranked fourth in cancer, while McLean Hospital ranked fourth in psychiatry.

Spaulding Rehabilitation Hospital moved up from eighth last year to sixth in rehabilitation, and Beth Israel Deaconess Medical Center ranked 12th in hormonal disorders, 21st in digestive disorders, and 24th in geriatrics. ■

Cellular Communications

IN LIGHT OF THE ONGOING CONTROVERSY about stem cell research, the Harvard Stem Cell Institute has launched a website that explains the basics of stem cell biology. The website also describes the institute's mission, which is to advance the science of stem cells from the laboratory to clinical applications. Visit <http://stemcell.harvard.edu> for more information. ■

The Best Defense

I STILL REMEMBER HOW IT TASTED—LIKE A GRAPE JOLLY Rancher. At the age of five, I found the oral polio vaccine an appealing alternative to a stick in the arm. In my second year of medical school, I learned the Sabin vaccine's other major advantage: it conferred mucosal immunity. I balked, though, at the live vaccine's serious downside. Between 1961 and 1997 an average of nine Americans a year developed vaccine-associated paralytic polio. Since the Centers for Disease Control and Prevention implemented an all-inactivated vaccine approach in 2000, however, no such cases have occurred.

By eradicating deadly illnesses, vaccines have become hallmarks of modern civilization. When I was a child in the 1980s, I received all my scheduled immunizations. My parents had grown up in an era in which polio posed a very real threat, a time when Elvis Presley received the intramuscular Salk vaccine to promote public awareness. I never questioned the need for vaccines; I considered them part of the litany of tasks I was supposed to complete, like homework and chores.



Mrs. Perry revealed that rather than vaccinating her children she had “ordered” chicken pox by sending a pair of her daughter’s pajamas to a friend with the virus.

I felt shocked, therefore, when I met a mother who had declined vaccines for her children. Mrs. Perry had three playful, talkative girls whom she taught at home, so school-entry requirements did not factor into her decision. During her conversation with my primary care preceptor, she revealed that she had “ordered” chicken pox by sending a pair of her eldest daughter’s pajamas home to a friend with the disease. The three girls soon developed spots.

Why, I wondered, would Mrs. Perry subject her children to two weeks’ worth of unnecessary itching and possible scarring? As I considered the issue further, I realized that Mrs. Perry was merely sticking to the familiar. She had probably experienced a benign course of chicken pox as a child, and rather than subject her daughters to a relatively new vaccine, she preferred the *au naturel* approach. She likely was unaware that the vaccine had been shown to reduce the incidence of varicella encephalitis; she had probably never even heard of that condition. Before routine vaccination, about one in a million American schoolchildren died from varicella.

In a sense, Mrs. Perry’s choice was based on ages’ worth of evidence. Giovanni Filippo first described chicken pox in the sixteenth century, and in 1767, the English physician William Heberden recognized it as a disease distinct from smallpox.

Since then, the medical community has come to understand the natural history of chicken pox and the virus that causes it, varicella zoster. The short- and long-term risks of varicella infection are known to be small. Conversely, we have had varicella vaccine for only ten years.

But even after only a decade of follow-up, it is clear that the vaccine saves lives. Between 1990 and 1994, the United States had an average of 145 varicella-related deaths a year; from 1999 to 2001, that rate had been cut nearly in half. At the population level, these data are compelling. The number of people requiring the vaccine is large, yet the intervention is relatively benign and carries an invaluable payoff.

Although research has answered the mortality question, others remain. How can we predict whether the Perry girls will be more or less susceptible to future chicken pox or zoster than immunized children? It is encouraging that vaccinated people with so-called breakthrough varicella have mild skin manifestations that tend to be less infectious than classic vesi-

cles. But as vaccine induced immunity wanes over time, boosters may be needed to prevent adult cases of chicken pox.

With the growth of our elderly population, zoster—or shingles—is becoming a more important public health issue. A recent placebo-controlled trial among adults aged 60 and over showed a greater than 50 percent reduction in zoster incidence after vaccination. These patients had all been infected previously with wild-type strains, possibly strengthening their cell-mediated immunity relative to vaccinated patients. Perhaps people who are vaccinated as children will need to receive earlier or larger booster doses to prevent zoster.

Despite the unknown burden of long-term morbidity, the up-front mortality benefits of childhood varicella vaccination remain clear. The Department of Health and Human Services has established target immunization rates for 2010 of 90 percent among children 19 to 35 months of age and greater than 95 percent at school entry. In the interest of children’s well-being, we must strive to promote these goals. Unfortunately for skeptical parents, no institutional review board will approve a randomized trial comparing vaccines with unwashed pajamas. ■

Nicole Martin ’06 is a fourth-year student at Harvard Medical School.

Tossed in Translation

FIFTY YEARS AGO, ACADEMIC RESEARCHERS RARELY found themselves embroiled in the ethics of translating their findings into useful drugs. They didn't worry that acceptance of consulting fees, industrial grants, or patent royalties might jeopardize their scientific objectivity or credibility. Many scientists of my generation, though, have decided to weather those risks; indeed, some investigators at the National Institutes of Health (NIH) are considering moving to institutions with less restrictive policies on commercial relationships. Others suspect that society suffers when distinctions between publicly supported and commercial investigations blur. One such skeptic was my mentor, Julius Axelrod.

Julie loved science. Weeks before he died last year at the age of 92 he was still visiting his old NIH laboratory and helping younger investigators design the simple, elegant experiments

healthy human subjects. Finally I'd draw on my medical background to identify diseases that might respond to any drugs that could affect the process I'd discovered.

Shortly after I arrived at MIT in 1968, my laboratory found that surprisingly low doses of tryptophan could increase production of the neurotransmitter serotonin in the rat's brain. We described our finding in leading journals and confidently awaited its application to serotonin-associated disorders, such as stress-related insomnia. It was indeed applied; by the late 1970s the annual market for tryptophan supplements had reached \$300 million. The amino acid, however, was being misused: Not only were suppliers selling it in doses that varied over a 20-fold range, but they were also failing to provide accurate advice about its best administration, such as not taking it with a glass of protein-rich milk.

Tragically, in 1989, a new commercial preparation of tryptophan, generated by a newly engineered microorganism, killed sev-

“I’ve had to confront, almost daily, complex ethical issues that have arisen from my—and my university’s—receipt of corporate funds, provided as patent royalties, research grants, or consulting fees.”

that were his trademark. Such experiments allowed him to make major discoveries about how the brain works, such as the uptake process, which terminates the actions of serotonin and other neurotransmitters. Another was a pain-relieving chemical, acetaminophen, now known commercially as Tylenol; when he published that finding in 1948 he neither thought to have it patented nor manifested an interest in participating in its development as a drug. Julie hoped, of course, that his discoveries would translate into new medicines. But to him, and to most of his generation, drug development was something pharmaceutical companies did, not research scientists.

My expectations differed. By the time I joined Julie's lab in 1962 as a research fellow, neuroscientists were learning enough about brain transmitters to understand how certain drugs worked. I decided to use my medical training both to discover information about the brain and to apply that knowledge to treating neurological and psychiatric diseases. I formulated a three-stage strategy. First, using laboratory animals, I would try to find a previously unknown biochemical process in the brain—measuring blood levels of melatonin, for example, or identifying the amino acids that control serotonin production. Then I'd determine whether the same process operates in

eral dozen Americans because the microorganism also produced two previously unknown toxins. None of these people would have died had the developers carried out standard Phase I safety testing on the new commercial preparation. I worried that I had erred by not staying involved in the process of tryptophan's transition to a drug. But I also couldn't think of any way I might have compelled the companies selling tryptophan to solicit my advice.

In 1980 the power of university scientists to affect the fate of their discoveries reached a watershed with passage of the Bayh-Dole Act. It had not escaped Congress's notice that troublingly few of the federally funded basic-science discoveries taking place at universities were being translated into useful treatments. The legislature concluded that this situation might improve if universities were given the right to patent those discoveries, to license the patents to companies that would develop them expeditiously, and to maintain some association with the development process.

MIT—and, ultimately, most universities—established a technology licensing office to implement these processes. Soon thereafter the director of MIT's office informed me that if I ever wanted to see my discoveries become medications, I needed to work with his office to help MIT patent them and to find licensees that would develop them. Without patent protection,

he explained, pharmaceutical companies had no incentive to undertake the risky business of developing a new drug if a competitor could market the same drug, a short time later, after having covered none of its development costs.

Many of my laboratory's discoveries have since been patented—always by MIT—and then licensed, and a few have become useful therapeutic products. But I've had to participate in all phases of this translation process and to learn about fields—such as patent law and drug regulation—that never concerned Julie's generation. And I've had to confront, almost daily, complex ethical issues that have arisen from my—and my university's—receipt of corporate funds, provided as patent royalties, research grants, or consulting fees.

Consider, for example, melatonin. In the 1960s, Julie and I had shown that rat pineal glands produce the hormone melatonin only when the animals are in the dark. In 1975 my MIT colleague Harry Lynch and I discovered that blood melatonin levels in people are at least ten times higher at night than during the day. My laboratory confirmed the connection between melatonin and sleep, first by showing in 1993 that it promoted sleep onset, then in 2001 that it enabled melatonin-deficient, older people to stay asleep. The correct melatonin dose—0.3 mg—turned out to be just the amount needed to raise blood melatonin levels to what they normally are, at nighttime, in healthy young adults.

MIT patented this use of melatonin, and I expected many to benefit, especially elderly people who tend to awaken during the night. But then major patent and regulatory problems arose: because the correct dose of melatonin was low, MIT elected to patent only doses up to 1.0 mg, believing that the Food and Drug Administration (FDA) would eventually approve melatonin as a drug and limit its use to the maximally effective 0.3 mg dose.

But the FDA decided not to treat melatonin as a drug; rather, it allowed the hormone to be marketed as a dietary supplement, which meant the dosage would remain unregulated. This allowed companies to sell it at high doses to circumvent the MIT patent. Such megadoses quickly rendered the melatonin ineffective: when the brain is repeatedly bombarded with excessively large amounts of a hormone like melatonin, it stops responding because the hormone's receptors become downregulated. Thus, many of the people who might have benefited most from melatonin's use lost its effect after a few days and then stopped taking it.

Only in the past year have companies finally started to sell melatonin at the correct dose. Now MIT will receive royalties—and I, as the inventor who created the intellectual property, will receive about 30 percent of these. And there-



in lies a potential ethical problem: Could someone argue that I recommended that people buy the low dosage because I receive royalties from those sales? Money wasn't my motivation, but I believe I have a duty to inform people about my potential conflict of interest.

This obligation to fully disclose should carry over, I believe, to all financial relationships between scientists and corporations, including consultancies, substantial lectureships, and laboratory research support. Disclosure is particularly important when the scientist's career involves addressing the public, writing review articles, or editing journals. Consumers have the right to any information that could raise questions about a scientist's objectivity—even when the scientist in question is a Julie Axelrod.

In Julie's case, of course, it's unlikely the question would ever have arisen, since his choice to steer clear of the translation process shielded him from the ethical consequences of financial involvement. It may also have cost society a few good drugs. ■

Richard Wurtman '60, the Cecil H. Green Distinguished Professor at MIT, directed the MIT Clinical Research Center for 20 years.

Franz Boas

An Illustrated Biography

by Norman Francis Boas '45 (*Seaport Autographs Press, 2004*)

WE ALL HAVE THE RIGHT TO FEEL PROUD OF OUR relatives. I treasure a photo taken about 20 years ago in the lobby of the Golden Nugget casino in Las Vegas. A horseshoe of muscular, poker-faced men are posing in front of a wall papered with one million dollars. In the center, half a foot shorter than anyone else, stands a bald man. He is squinting at the camera through Coke-bottle glasses. This is my great-uncle Morris Shapiro. He was 75 then and, although pushing 100 now, is still one of the finest Texas Hold'em players in the world. Family lore has it that he put a number of us through graduate school. He is my claim to fame.

Norman Francis Boas '45, retired from his position as assistant clinical professor of medicine at Yale University, has a proud family claim in a different sphere of society. He writes about it in *Franz Boas: An Illustrated Biography*. The man known as "Grosspapa" Boas to his grandson was Professor Boas to the world: founder of anthropology as a science in the United States, mentor to the likes of Margaret Mead and Ruth Benedict, creator of the concept of cultural relativism, and, in more than 650 books and articles, enemy of the notion of racial or ethnic superiority. His was a long and stupendous life, retold factually here, with pages of grainy photographs that become more arresting as their subject becomes more obviously remarkable.

"If I do not become really famous, I do not know what I will do," Franz Boas wrote hungrily to his sister when he was only 15. Born in 1858 to a Jewish merchant in Germany, he studied physics, math, and geography. He also took up dueling and was scarred in college by a series of anti-semitically fueled fights.

His doctoral dissertation was about the color of water, but while working on it, he managed to write five other theses as well. Then his broad mind, larger than any single science, became interested in psychophysics—the study of how physical forces affect human behavior. When he was 25 years old, he arranged a famous trip to the Arctic, where conditions require ultimate human adaptations. Preparation included learning astronomy, meteorology, magnetism, anthropometry, Inuit languages, Danish, photography, and cartography. There was probably no time left to master Texas Hold'em.

Boas traveled 2,400 miles over the next year by dogsled, on foot, and by boat, mapping hundreds of coastal miles, eating blubber, keeping a fastidious 500-page journal in pencil (ink froze), and studying how land conditions affected Inuit migration. This trip, and later trips where he studied Vancouver Island Indian tribes, gave him data for his theory of cultural relativism. One culture, he argued, is never superior to another. Instead, each is equally conditioned by need and each is perfectly created to serve itself.

Dramatic, sometimes lurid tales followed Boas back from his international adventures, and his work was not everywhere welcomed. When he founded an anthropology program at Clark University, he proposed measuring public school children in Worcester using anthropometrics. The local paper promptly identified him as someone who "fooled around with the topknots of medicine men...and toyed with the war paint of bloodthirsty Indians." The proposal was voted down.

Nor were all of his research methods palatable by current standards. While working at the Museum of Natural History in New York, he once asked the explorer Robert Peary to "bring a middle-aged Eskimo [from Greenland] to stay here over the winter. [This will] enable us to obtain leisurely...information." Peary brought back six. Without sufficient local immunity, four of them died of infections while leisurely sharing their information.

Yet in his later years, Boas grew into moral as well as scientific greatness. His grandson writes about this with beautiful pride. When some of his anthropometric techniques were used to "prove" white

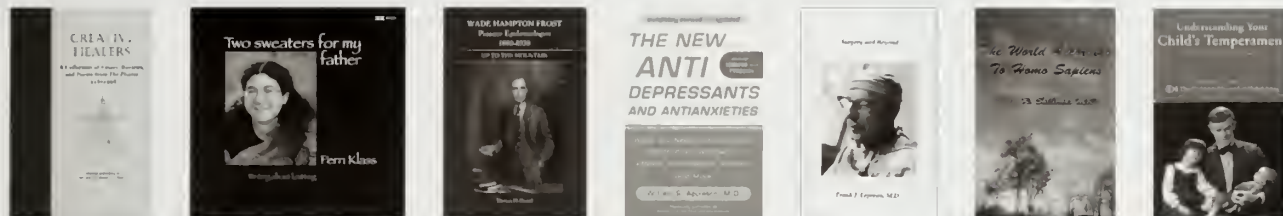
racess superior to non-white, and Aryan superior to non-Aryan, the elder Boas dueled this time with intellect, not steel. After his books were burned in Nazi Germany, he responded by serving as chairman of the American Committee for Democracy and Intellectual Freedom. In the United States, he opposed the inequitable poll tax, which prevented many African Americans from voting. At the age of 80, still not finished, he published a 600-page treatise on race and culture.

His mission accompanied him to the end. In 1942, during a faculty lunch, Boas began a talk with the words, "I have proved a point about race." Then he collapsed. If one can make judgments about death—a tricky idea to be undertaken carefully—the end of this life was one more proof of its passion. ■

Elissa Ely '88 is a psychiatrist at the Massachusetts Mental Health Center.



THEORY OF RELATIVITY: Franz Boas, posing here as a seal-hunting Inuit, rejected notions of cultural superiority.



Creative Healers

A Collection of Essays, Reviews, and Poems from The Pharos, 1938–1998, compiled and edited by Edward Day Harris, Jr. '62 (Alpha Omega Alpha, 2004)

This collection anthologizes 75 physician-written essays, poetry, reviews, and articles that have appeared in *The Pharos*, the magazine published by the medical honor society Alpha Omega Alpha. In its readers will find a timeless piece on the value of intellectual curiosity, an examination of the role of the presidential physician, and a history of the lobotomy sharing the spine with a review of *Saturday Night Fever*.

Two Sweaters for My Father

Writing About Knitting, by Perri Klass '86 (XrX Books, 2004)

Klass turns her writing skills to the Zen of knitting. Her characteristic humor and honesty are woven into each piece as she recalls how, as a pediatric intern, she used knitting to help her stay awake during lectures and explores how knitting has helped her clarify the essential nature of her relationships.

Up to the Mountain

Wade Hampton Frost, Pioneer Epidemiologist, 1880–1938, by Thomas M. Daniel '55 (University of Rochester Press, 2004)

Daniel, retired from his position as professor of international health at Case Western Reserve University, details Frost's life and work in this biography.

Frost was the first professor of epidemiology at The Johns Hopkins University, and he trained many of the nation's public health leaders. Some of his contributions include the development of methods for tracking influenza epidemics and the use of age cohorts in longitudinal studies.

The New Antidepressants and Antianxieties

What You Need to Know About Zoloft, Paxil, Wellbutrin, Effexor, Clonazepam, Ambien, and More, by William S. Appleton '61 (3rd edition; Plume, 2004)

As the number of patients taking medication for depression and anxiety continues to rise, so does the number of drugs available for treatment. Appleton shares his latest research and uses case studies to illuminate the advantages and disadvantages of the newest drugs on the market. The book also addresses anger disorders, which are only now emerging as recognized diagnoses.

Surgery and Beyond

by Frank J. Lepreau '38 (Old Harbor Publishing, 2005)

This memoir chronicles Lepreau's life beginning with his years at Dartmouth, his time at HMS, and his stint as a general surgeon in Fall River, Massachusetts. The book then recounts the ten years Lepreau spent working in Haiti at the Hôpital Albert Schweitzer, where he had a very successful record of pulmonary surgery for tuberculosis. Upon

returning to the States, Lepreau worked with the impoverished in Appalachia's mining towns and eventually founded a clinic for substance abusers in Westport, Massachusetts. The book charts not only the external events of a life, but also the interior evolution of a physician.

The World According to *Homo Sapiens*

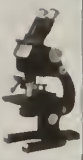
by Philip R. Sullivan '57 (iUniverse, 2005)

Sullivan, a psychiatrist and sheep farmer, probes what makes our experience of the world unique to our species. Philosophy, biology, particle physics, and Greek mythology commingle to shape the book's broad view of *Homo sapiens*. Divided into three parts, the book examines our physical perception of the world, our application of values in making choices, and our consciousness of our experiences.

Understanding Your Child's Temperament

by William B. Carey '54 with Martha M. Jablow (Revised edition; The Children's Hospital of Philadelphia, 2005)

One family, two kids, two temperaments. One child is a bold chatterbox; the other daydreams constantly. Carey's book helps parents and other caregivers recognize nine distinct traits that dictate how a child will interact with his environment, and thus, how temperament may affect a child's health, school performance, and development. The book is especially helpful for parents who want to understand their child's temperament in order to guide and meet the child's needs.



Research Roundup

Splitting the Difference

Subtle differences in how a single gene behaves on opposite sides of the growing brain may explain how such talents as language, math skills, and imagination arise in specific sides of the brain in most people.

According to Howard Hughes Medical Institute investigators Christopher A. Walsh and Tao Sun and their colleagues at Beth Israel Deaconess Medical Center and Harvard Medical School, the discovery that a gene called *LM04* is expressed differently in the cerebral cortex in the left brain, compared to the right brain, may help explain how in most people one side of the brain achieves dominance over the other. A detailed report on their findings appears in the June 17 issue of *Science*.

"This left/right asymmetry in the brain is an essential part of our humanness," Walsh says, "and learning how it comes about is important for understanding where our human abilities came from." Perhaps more important, Walsh adds, this normal asymmetry of

the brain is disrupted "in a host of human neurological diseases, such as schizophrenia. So this may offer us entry into how such problems relate to the development of the human brain."

Magnetic Reaction

A new therapy that uses magnetic pulses to stimulate the brain may improve recovery after a stroke, according to a study published in the May 24 issue of *Neurology*. The treatment, called repetitive transcranial magnetic stimulation, consists of a brief electrical current passed through an insulated wire coil placed on the scalp to create a magnetic pulse that stimulates the brain cortex.

The study compared eight recent stroke victims who were relearning to use their affected hands with six people who had never had a stroke. Motor function in the affected hands of the stroke patients improved by as much as 50 percent on some of the tests; healthy volunteers exhibited no motor improvement.

"These results are exciting because magnetic stimulation is a non-invasive, painless therapy that can be done while patients are awake," says study author Felipe Fregni, a physician at Beth Israel Deaconess Medical Center and an HMS instructor of neurology. "These results need to be confirmed by larger studies with more patients, but the results are encouraging."

CT Calls

Five years ago at Massachusetts General Hospital (MGH) the negative appendectomy rate—which measures how often patients with symptoms of appendicitis have their appendix removed and are subsequently diagnosed as not having had acute appendicitis—was 20 percent, but since the advent of CT screening for appendicitis, it has dropped to 3 percent, say MGH researchers.

"Prior to CT there was no way without surgery to be sure whether appendicitis was present in most patients," says James Rhea, lead author of the study,

TIME TO KILL



EVEN WITH MODERN MEDICAL TREATMENT, PATIENTS WHO HAVE experienced a heart attack remain at increased risk for sudden death after their discharge from the hospital. To better understand whom to treat and when, researchers at Brigham and Women's Hospital (BWH), in collaboration with an international research team, studied sudden death among heart attack victims enrolled in the VALIANT trial (Valsartan in Acute Myocardial Infarction Trial). The study appears in the June 23 issue of the *New England Journal of Medicine*.

According to lead author Scott Solomon '86, director of non-invasive cardiology at BWH, given today's life-saving drugs and treatments, it is important to better understand the threshold of risk. "As we discharge patients earlier and earlier after heart attacks, we need to consider this risk. While we currently have good long-term therapies for patients at high risk for sudden death—notably, implantable defibrillators—the fact

Subtle differences in how a single gene behaves on opposite sides of the growing brain may explain how such talents as language and math skills arise in specific sides of the brain.

which appeared in the June 2005 issue of the *American Journal of Roentgenology*. "In most patients CT will be helpful in deciding whether to remove the appendix."

Policing the Barrier

Novel immune-boosting therapy with a hematopoietic growth factor may reduce symptoms and improve the quality of life for people with Crohn's disease, according to a team of researchers whose recent clinical trial findings appear in the May 26 issue of the *New England Journal of Medicine*.

Crohn's disease, a chronic inflammatory disorder of the gastrointestinal tract, is currently treated with immunosuppressive agents to reduce symptoms only; there is no known cure. But a new understanding of the pathophysiology of the disease—specifically that the cause may be a defect in the intestinal innate immune system—led researchers to hypothesize that a failure in the defensive barrier of phagocytic cells in the intestines may result in microbe exposure and thus an enhanced inflammatory

response, and that an immune enhancer could aid Crohn's patients.

"We're encouraged that these results support this new understanding of Crohn's," says lead author Joshua Korzenik, co-director of the Crohn's and Colitis Center at Massachusetts General Hospital, "and hope they will lead to a new treatment option for the disease."

A Leap in the Right Direction

A recent study showed that the proteasome inhibitor bortezomib (Velcade) is twice as good at treating multiple melanoma as a conventional medication. The report, by Dana-Farber Cancer Institute (DFCI) researchers and their colleagues, appears in the June 16 issue of the *New England Journal of Medicine*.

The findings represent the first wave of tangible benefits resulting from a molecular understanding of how drugs work against disease. "These results provide confirmation that bortezomib should be used at first relapse, and they provide a strong rationale for its use as an upfront



therapy," says first author Paul Richardson, clinical director of the Jerome Lipper Multiple Myeloma Center at DFCI.

Bortezomib can cripple myeloma that has become resistant to conventional treatment, and it seems to boost the power of conventional therapies when given in combination. But, in a recurring scenario with the first generation of new, targeted therapies, myeloma cells become resistant to bortezomib. "It's a good drug," says Angela Dispenzieri, associate professor of medicine at the Mayo Clinic in Rochester, Minnesota. "It isn't the cure, but perhaps it will be part of the cure someday." ■

that this risk is very high early on, then declines, would support the development of short-term strategies."

Researchers studied 14,609 men and women with left ventricular dysfunction, heart failure, or both after heart attack to assess the incidence and timing of sudden unexpected death in relation to left ventricular ejection fraction. Causes of death were classified as non-cardiovascular or cardiovascular, and cardiovascular deaths were further classified as sudden or due to heart attack, heart failure, stroke, or other cardiovascular causes.

Of all the patients studied, 1,067 died suddenly or were resuscitated following a cardiac arrest (the median time after heart attack was 180 days). The risk of sudden death or cardiac arrest was highest in the first 30 days after heart attack. Indeed, during the first month, the rate of sudden death or cardiac arrest was 1.4 percent; after two years, the rate dropped to one-tenth of that. Furthermore, most patients who

died suddenly during the first 30 days did so after hospital discharge. Those with lower left ventricular ejection fraction, diabetes, and hypertension carried a higher risk of sudden death or cardiac arrest.

According to the researchers, these data indicate that the risk of sudden death changes dynamically after a heart attack, and that even patients with higher ejection fraction may be at risk during this early period. Current guidelines recommend implantation of a defibrillator for patients with significantly reduced left ventricular function after a heart attack, but not until at least 30 days after the event. During this period, many patients who remain at high risk are unprotected.

"We need to consider therapies and strategies, even short-term bridging strategies," says Salaman, "that could protect patients during this early vulnerable period following a heart attack." ■



Not Sleeping Tight: Heart Tracings Reveal the Instability of Sleep

DURING THE MOST RESTFUL SLEEP, the resting heart speeds up and slows down slightly with each breath in and out. But when the heart rhythm drops out of sync with breath-to-breath respiration, slumber becomes more fitful and tiring.

Normally, a person must be wired and monitored from head to toe to assess sleep quality. An overnight sleep evaluation continuously tracks brain waves, eye movements, snoring, leg twitches, teeth grinding, and much more. Now, just one of the many tracings, a simple continuous electrocardiogram (ECG), may be able to do the job of a suite of independent instruments, researchers at Beth Israel Deaconess Medical Center (BIDMC) report in the September issue of *Sleep*.

"This is a distal but clean biomarker that tells us if the system is oscillating in synchrony with each breath or over multiple breaths," says first author Robert Thomas, head of the BIDMC sleep laboratory and HMS instructor in medicine. "This reflects stable and unstable sleep behavior. Disease expands the unstable behavior of the system. The goal of treatment is to enhance the stable behavior."

If validated by further studies, the ECG as a measure of sleep stability may be an easier and less expensive way of diagnosing and guiding the therapy of sleep disorders.

The work also lends credence to a nonconventional way of thinking about the stages that make up most of a good night's sleep, known as non-rapid-eye-movement (non-REM) sleep. The researchers' ECG analysis revealed two states of non-REM sleep, stable and unstable. In contrast, the traditional staging system divides non-REM sleep into four grades ranging from light to deep sleep, which correlate with the effort needed to wake someone up. The sleep staging standards are now being reevaluated (see sidebar).



The Heart of Sleep

In overnight evaluations, multiple lines of data spike and plunge across a large computer screen in real time as the seconds and minutes pass. When one measurement changes—reflecting a gasp, a snore, or a shift in body position—most of the other markers change in synchrony. "A sleep study is like an orchestral score of the music of the sleeping body," Thomas says.

"The breathing and heart rate control turn out to have a profound connection to what's going on in the brain during sleep," says senior author Ary Goldberger, director of the Margaret and H. A. Rey Institute for Nonlinear Dynamics in Medicine at BIDMC and an HMS professor of medicine. "It ratifies the growing consensus of the importance of cross talk and systems biology. You have one set of conversations going on between the heart and lungs and nervous system in health. In pathology,

the frequency and tone of that conversation literally changes and you see a new conversation emerge."

Thomas began to wonder about non-REM sleep about five years ago. He was becoming both intrigued and frustrated by the spontaneous flips back and forth between stable and unstable patterns of sleep in patient after patient. Bad sleep could suddenly change to good and vice versa without any intervention and while remaining in the same grade of non-REM sleep.

In the Land of Nod

Brain waves are the gold standard in sleep medicine. Thomas noticed that the electroencephalogram patterns of these Jekyll-and-Hyde sleep patterns had been described by a group of Italian researchers as cyclic alternating patterns (CAP) and non-cyclic alternating patterns (non-CAP). In several published studies,

Thomas correlated the CAP/non-CAP to measurements of sleep quality and sleep disorders. Seeking an independent validation, he turned to Goldberger's group.

Meanwhile, coauthor Joseph Mietus, a BIDMC bioengineer, had shelved an initially disappointing algorithm he had devised to deconstruct a single jagged ECG plot to show the link between the heart rate and breathing dynamics. He had hoped it would help diagnose sleep apnea, but he could not correlate his results with the classic non-REM sleep staging standards. Coauthor Chung-Kang "C. K." Peng, an HMS assistant professor of medicine and co-director of the Rey laboratory, thought the approach had promise and urged him to pursue it further.

When Thomas first asked them for a mathematical way to distinguish between CAP and non-CAP sleep in his sleep

study datasets, Goldberger, Mietus, and Peng felt daunted by what they envisioned as an insolvable problem.

But because Goldberger directs PhysioNet, a research resource funded by the National Institutes of Health, his group felt a responsibility to help Thomas, an NIH-funded researcher. So Mietus ran a sample dataset through his algorithm, expecting it to be a dead end.

"It turned out to be enormously exciting," Goldberger says. They refined the technique with 70 sleep studies on patients from BIDMC and other accredited sleep centers. The stable and unstable sleep patterns overlapped with—but were not identical to—the CAP/non-CAP brain wave patterns. When the researchers retested the trained algorithm on data from 15 healthy people who were part of a different study, they discovered

that stable and non-stable sleep were a feature of normal sleep in healthy people.

Mietus devised a quick way to visualize the results using a "sleep spectrogram" with two distinct mountain-range bands. Healthy people show more stable sleep; people with untreated sleep disorders show more unstable sleep. The stable and unstable sleep patterns do not correlate with conventional non-REM sleep staging, suggesting a complementary new view of sleep regulation and physiology.

"We are not proposing a new sleep classification system," Thomas says. "We're saying this is how non-REM sleep works. The field can decide what to do with the new information and how to use this new tool." ■

Carol Cruzan Morton is a science writer for Focus.

EFFORTS TO AWAKEN SCIENCE TO TIRED SLEEP CLASSIFICATIONS

Almost 40 years ago, a dozen sleep scientists grew concerned about the reliability of the way they scored stages of sleep in their research. One weekend, they met to refine a set of standards for classifying the sleep cycle as wakefulness, rapid eye movement (REM), and non-REM.

A major sticking point came in discussions about how to further classify the obvious variations in non-REM sleep. At one point during the extended debate, Allan Rechtschaffen from the University of Chicago, who coauthored the resulting manual, locked the door and declared that the scientists could not leave until they had reached a consensus. It was an empty threat, but it worked. They divided non-REM sleep into four stages known as arousal thresholds, which roughly correlate with the amount of shouting and shaking required to wake someone up.

Published in 1968, the manual provided an important tool for modern sleep research. The rapidly expanding field of sleep medicine also relied on the manual, even though the supporting data were mostly based on observations of healthy people.

"It gave people a language and a tool with which they could compare observations," says Wolfgang Schmidt-Novotny of the Sleep Medicine Institute at Presbyterian Hospital of Dallas, "but it doesn't do a particularly good job of providing insights or parameters for diagnosing disease."

For the first time, the manual is being revised to include more clinically relevant standards, such as the addition of respiratory and cardiac criteria. Extensive evidence from people with sleep disorders will underlie some of the changes. Where sufficient evidence does not exist, the reviewers will revert to consensus.

The staging of non-REM sleep has remained problematic. The reworked manual is not scheduled for completion until the summer of 2006, but it appears that the scoring of non-REM sleep may be compressed into three stages, says Conrad Iber of the University of Minnesota, who is heading the process for the American Academy of Sleep Medicine.

Digital analyses, such as the new study by Robert Thomas and his colleagues at Beth Israel Deaconess Medical Center, will be considered, but the studies are probably too preliminary to be included in the new manual, Iber says.

"It's missed that boot," Thomas says. "Maybe in the next reclassification."

The new standards will undergo review every five years, Iber says. In the meantime, Thomas has integrated the new knowledge into his clinical practice by more precisely tuning treatment to enhance stable sleep. And he and his colleagues have launched new studies to evaluate clinical correlates of stable and unstable sleep. ■



REINVENTING the WHEEL

How can doctors avoid becoming white-coated cogs in the machinery of medicine?

BY ATUL GAWANDE

I was stunned to receive the call requesting that I speak to your class, and I thank you for the unbelievable honor. Only ten years ago, I was sitting just where you are—right there, six rows back, a bit to the side—a graduate-to-be largely unaware of what I was getting myself into. Looking back, I think it was the numbers I was least prepared for. We are a nation with a population of more than 296 million people. For these people—never mind the six and half billion others around the world—you today become but one of 819,000 U.S. physicians and surgeons. Also taking part in the effort to help people lead long, healthy lives are some 2.4 million nurses, 388,000 medical assistants, 232,000 pharmacists, 294,000 lab technicians, 121,000 paramedics, 94,000 respiratory therapists, and 85,000 nutritionists. The numbers are incomprehensible.

Now, a doctor is no bit player. You leave HMS with the power to prescribe any of more than 6,600 potentially dangerous drugs. You will be permitted to put needles, wires, and tubes into human

beings and soon even to manipulate their DNA. Hundreds will depend on you personally for their lives and their happiness. This is the special function we, as doctors, get to serve in society.

Yet, in the midst of this work, you will fast realize that you are still just part of a machine—an extraordinarily successful machine, but a machine nonetheless. How could it be otherwise? The average American can expect to live at least 78 years—two years longer than when I graduated. But reaching—and surpassing—that goal depends more on this system of hundreds of thousands of clinicians than on any one individual within it.


So as you become a white-coated cog in this machine—this remarkable and, at the same time, maddening factory of health care—how do you not disappear? How do you matter?

I'd like to offer five rules that may guide you in finding good answers to these questions. My rules for medical practice should be distinguished from the laws of medical practice. Rules are personal instructions you might follow in your life as a doctor. Laws are the immutable realities you come up against in that life. For example, one law is: The labs are always normal, the lumps are

But what I want to talk about are **SOME RULES** thousands who make their lives in this strange and teeming world of **TO MAKE A WORTHY**

never cancer, and the 16-year-olds are never pregnant—unless you fail to check. Or: If your new patient is on five or more drugs, you will not have heard of at least one of them.

Many other laws exist. There are, for example, 35 laws governing the behavior of pagers alone. But what I want to talk about are some rules for how to survive among the hundreds of thousands who make their lives in this strange and teeming world of medicine—and, moreover, having survived, how to make a worthy difference.

 **My Rule #1** for you comes from a favorite essay by the writer Paul Auster: *Ask an unscripted question.* Ours is a job of talking to strangers. Why not learn something about them?

On the surface, this seems easy enough. Then your new patient arrives. You still have three others to see and two pages to return, and the hour is getting late. In that instant, all you will want is to get things over with. Where's the pain, the lump, whatever it is? How long has it been there? Does anything make it better or worse? What are your past medical problems? You all know the drill.

But I want you, at an appropriate point, to take a moment with your patient. Make yourself ask an unscripted question: "Where did you grow up?" Or: "What made you move to Boston?" Or: "Did you watch last night's Red Sox game?" You don't have to come up with a deep or important question, just one that lets you make a human connection. Some people won't be interested in making that connection. They'll just want you to look at the lump. That's okay. Look at the lump in that case. Do your job.

You will find, however, that many respond—because they're polite, or friendly, or perhaps in need of that human contact. When this happens, see if you can keep the conversation going for more than two sentences. Listen.

Make note of what you learn. This is not a 46-year-old male with a right inguinal hernia. This is a 46-year-old former mortician, who hated the funeral business, with a right inguinal hernia.

You can do this with people other than patients, too. Ask a random question of the medical assistant who checks their vitals, the ICU nurse you see on rounds. It's not that making this connection necessarily helps anyone. But you will start to remember the people you see, instead of having them all blur together. And sometimes you will discover the unexpected.

I learned, for instance, that an elderly Pakistani phlebotomist I saw every day during my residency had been a general surgeon in Karachi for 20 years, but emigrated for the sake of his children's education. I found out that a quiet, carefully buttoned-down nurse I work with had once dated Jimi Hendrix.

The machine will gradually feel less like a machine.



Rule #2 is: *Don't whine.* To be sure, doctors have plenty to complain about: computer system crashes, pre-dawn pages, insurance companies, work getting dumped on us at six o'clock on a Friday night. We all know what it feels like to be tired and beaten down. Yet nothing in medicine is more dispiriting than hearing doctors whine.

Anyone who has played high school sports understands the dynamic I'm talking about. Morale is elusive and fragile. My southern Ohio hometown high school tennis team traveled up to 75 miles through Appalachia for matches against other teams. We were undefeated. But when the weather got hot, a few bad calls went against us, the matches grew close, and that long, un-air-conditioned ride home began to loom, the griping would begin. It was all Coach Roach (that really was his name) could do to keep us from giving in to defeat. He'd stomp and yell, "What are you cry-

babies bellyaching about?" Since he was also the school psychologist, we'd finally remember the reason we were there.

The practice of medicine can go the same way. It is a team sport with two differences: the stakes are people's lives and we have no coaches. The latter is the most relevant difference. Doctors are supposed to coach themselves. We have no one but ourselves to buck us up. But we're not good at it. Wherever you find doctors—sitting with fellow residents in the hospital cafeteria, waiting in a conference hall for grand rounds to start—you will find the natural pull of conversational gravity is toward the litany of woes all around us.

Resist it. It's boring, and it will get you down. You don't have to be sunny about everything. Just be prepared with something else to talk about: an interesting patient you saw, an idea you read about, even the weather if that's all you've got.

Then see if you can keep the conversation going.



Rule #3 is: *Count something.* No matter what you ultimately do in medicine—whether you go into purely clinical practice or work in research or business and never touch a patient again—a doctor should be a scientist in his or her world. In the simplest terms, this means we should count something. The laboratory researcher may count the number of tumor cell lines with a particular gene defect. Likewise, the clinician might count the number of patients who develop a particular complication—or even just how many are seen on time and how many were made to wait. It doesn't really matter what you count. You don't need a research grant. The only requirement is that what you count should be interesting to you.

When I was a resident I began counting how often our surgical patients ended up with an instrument or sponge forgotten inside them. It didn't happen often: about one in 15,000 operations. But

for how to survive among the hundreds of medicine—and, moreover, having survived, how DIFFERENCE.

when it did, serious injury could result. One patient had a 13 inch retractor left in him, which tore into his bowel and bladder. Another had a small sponge left in his brain, which caused an abscess and permanent seizure disorder.

Then I counted how often such mistakes occurred because the nurses hadn't counted all the sponges like they were supposed to, or because the doctors had ignored nurses' warnings that an item was missing. It turned out to be hardly ever.

Then I got a little more sophisticated and compared patients who had objects left inside them with those who didn't. It turned out that the mishaps predominantly occurred in patients undergoing emergency operations or procedures that revealed the unexpected—like a cancer when the surgeon had anticipated only appendicitis.

The numbers began to make sense. If nurses have to track 50 sponges and a couple hundred instruments during an operation—already a tricky thing to do—it is understandably much harder under urgent circumstances, or when unexpected changes require bringing in lots more equipment. Punishing people wasn't going to eliminate the problem. Only a technological solution would—perhaps a way of scanning for sponges and instruments in everyone.

If you count something you find interesting, you will learn something interesting.



Rule #4 is: Write something. It makes no difference whether you write a paper for a medical journal, five paragraphs for a website, or a collection of poetry. Try to get your name in print at least once a year. What you write need not achieve perfection. It needs only to add some small observation about our world.

One should not underestimate the effect of one's contributions. As the physicist John Ziman once pointed out,

"The invention of a mechanism for the systematic publication of 'fragments' of scientific work may well have been the key event in the history of modern science." By soliciting modest contributions from the many, we have produced a store of collective know-how with far greater power than any one individual could have achieved. This is as true outside science as inside.

One should also not underestimate the power of the act of writing itself. I did not write until I became a doctor. But once I became a doctor, I found I needed to write. Medicine is retail. We provide our services to one person at a time, one after another. It is a grind. For all its complexity, it is more physically than intellectually taxing. But writing let me step back, engage as more than a retailer, and think through a problem. Even the angriest rant forces the writer to achieve a degree of thoughtfulness.

Furthermore, by offering your writing to an audience, even a small one, you connect yourself to something larger than yourself. The first work I ever published, in an online magazine, was a diary of five days as a surgical resident. I remember my reaction after the piece came out. I was proud but also nervous. Would people notice it? What would they think? Did I say something dumb? An audience is a community. The published word is a declaration of membership in that community and also of the desire to contribute something meaningful to it.

So choose your audience. Then write something.



Rule #5, my final rule for a good life in medicine, is: Change. In medicine, as in any human endeavor, people respond to new ideas in one of three ways. A few become early adopters, as the business-types call them. Most become late adopters. And some remain persistent skeptics, who never stop resisting. A

doctor has good reasons to adopt any of these stances. When Joseph Murray '43B and Francis Moore '39 performed the world's first successful kidney transplant 50 years ago after 30 deaths, when a French gynecologist first pointed his laparoscope in a new direction and used it to take out a gallbladder, when cholesterol lowering drugs first came out, when the first electronic medical record was invented—who was to say whether these were truly good ideas? We have seen plenty of bad ones. Frontal lobotomies were once performed to control chronic pain. Vioxx turns out to cause heart attacks. Viagra, it was recently discovered, may cause partial vision loss.

Nonetheless, make yourself an early adopter. Look for the opportunity to change. I am not saying you should embrace every new trend that comes along. But be willing to recognize the inadequacies in what we do and to seek out solutions. As successful as medicine is, it remains replete with uncertainties and failure. This is what makes it human, at times painful, and so worthwhile.

You become doctors today, and the choices you make with your patients will be imperfect but will nonetheless alter their lives. There will come a time when, because of that reality, it seems safest to do what everyone else is doing—to be just another white-coated cog in the machine.

Don't let yourself be. Find something new to try, something to change. Count how often you succeed and how often you fail. Write about it. Ask a patient or a colleague what they think about it. See if you can keep the conversation going. ■

Atul Gawande '94 is a surgeon at Brigham and Women's Hospital, an assistant professor of surgery at HMS, an assistant professor of health policy and management at the Harvard School of Public Health, and a staff writer for The New Yorker.

BACK to the FUTURE

A young physician's lighthearted take on an imaginary medical forbear highlights the timeless nature of the School's mission.

BY JARED KESSELHEIM

In a few short hours, we will launch our careers as physicians, researchers, and—for those of us who erred in filling out our match forms—respiratory therapists. And while graduation day is very much about looking at our future, we must also ponder the past and realize that we are joining an unbroken chain of HMS graduates now stretching back nearly 225 years. I was reminded of this point yesterday when I came across a fascinating building. You would think that after four years at HMS I would know everything about my own campus. But just 24 hours ago, I stumbled upon a remarkable structure that houses physical versions of the medical books and journals I read online. It is called the Countway Library of Medicine.

In the basement of this mysterious building, I unearthed the secret diary of a Harvard Medical School student from the Class of 1795—John Warren, Jr. Reading the words John penned so many years ago has convinced me that many of the experiences that marked our days at HMS are indeed timeless.

Do you remember the excitement of receiving your HMS acceptance letter?

Well, consider John's entry dated March 3, 1791: "Dear Diary: I am so excited! I have just found out I was selected to attend the new medical school at Harvard. It is certainly the more prestigious of the two American medical schools in existence. Perhaps now that I am a Harvard man, girls will finally like me." Or his entry from just a few days later: "Dear Diary: 'Twas a false hope—I remain lonely."

For the Class of 2005, our first year was a blur: from anatomy to microbiology to Patient/Doctor I, we were transfixed by our first exposure to medicine. I believe John was expressing a similar sentiment in his entry from May 6, 1792: "Dear Diary: First year has been such a blur. I am enjoying all of my classes, from neurocarpentry to advanced bloodletting. Especially crucial has been Patient/Doctor I, in which I am learning to communicate with my broad range of patients, from the white Episcopalians of the North Shore to the white Lutherans of the South Shore."

Let me skip a bit ahead here, so we can see what John had to say about life on the wards. This entry is dated October 12, 1793: "Dear Diary: My medicine resident says I have the option to give a five-minute presentation to the team on the topic of my choice. But I wonder: Is it really optional? If it is not optional, should I make a handout? If I make a handout, should I tell the other students that I will be making a handout, or should I just surprise them with it?" Yep, pretty much the same as it is today.

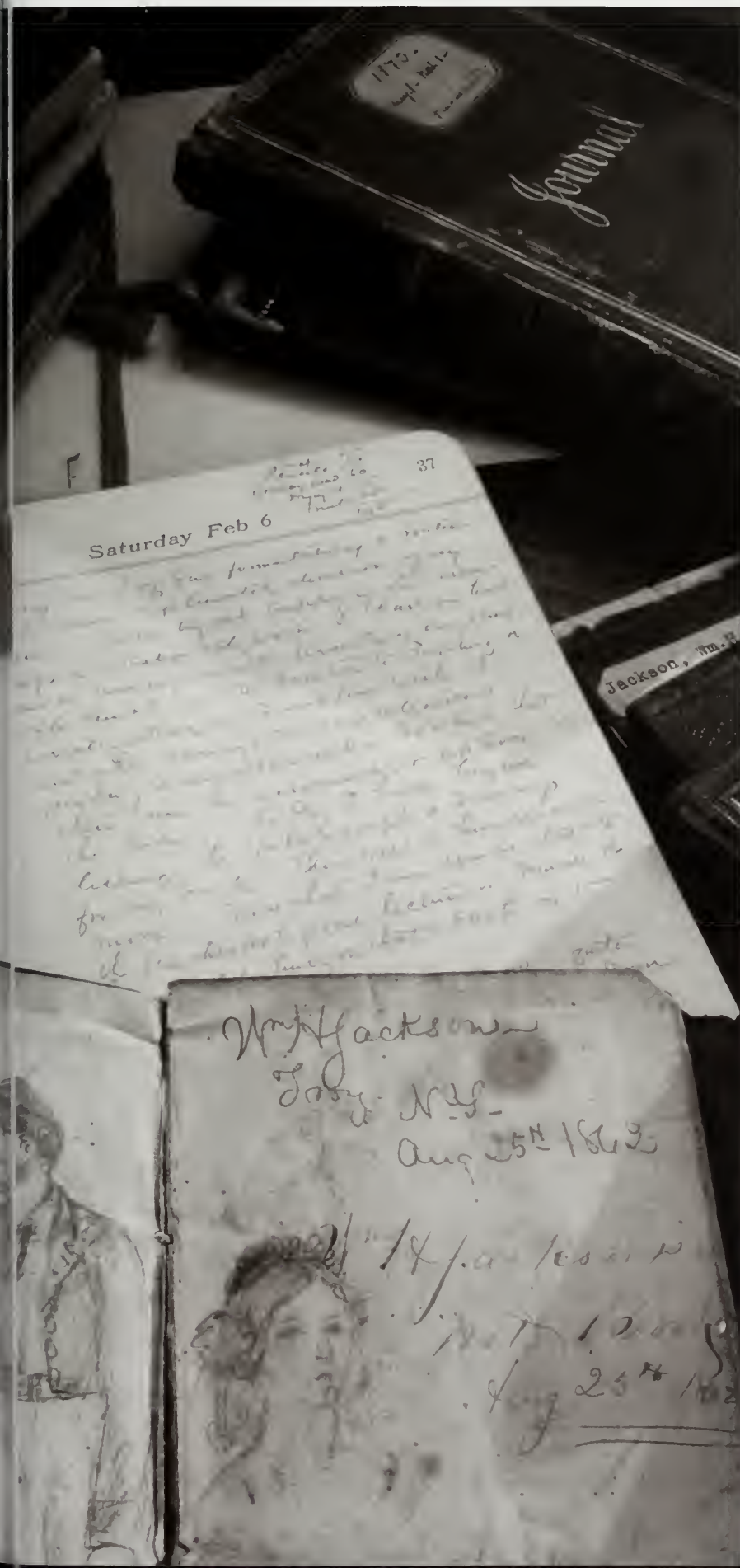
I also discovered an entry dated June 9, 1795, which I found particularly relevant to us at these commencement exercises: "Dear Diary: Graduation day has arrived! My whole family has made the six-hour journey—from Brighton. I am excited but apprehensive about what lies ahead. There are high expectations for Harvard Medical School graduates, and I hope I can live up to them."

Indeed, truer words have never been written in a phony diary. Our predecessors have taken the training they received here and gone on to produce amazing work as healers, researchers, and champions of social justice. HMS graduates have included legends in the history of medicine, such as Harvey Cushing, Class of 1895, the father of modern neurosurgery, as well as more recent physician stars, such as Paul Farmer '90, founding director of Partners in Health, an international organization that advocates for those who are sick and living in poverty. With such a pantheon of pioneers preceding us, those of us here today in black robes might well be a little nervous.

But instead we should celebrate our connection to other graduates—young and old, current and past, fictional and real—who have forged their medical development in the crucible of these same halls through which we have had the privilege to walk during the past few years. We are entering a special community of HMS alumni. Let this community be a fount of strength in the years to come, not a source of intimidation. Let the successes of our forebears challenge and inspire us.

No matter where you go from here—whether it's the Brigham, Mass General, or the Brigham—never forget your time on this campus. Because from the Class of 1795 to the Class of 2005, Harvard Medical School has been turning out passionate, caring physicians for more than 200 years, and now it is our turn to make sure that it will do so for the next 200 as well. ■

Jared Kesselheim '05 is a resident in internal medicine at Massachusetts General Hospital.



LUCK Of the DRAW

A new graduate appreciates the good fortune that led him to HMS—and the wisdom of those who helped him through it.

BY GREGORY FELDMAN

It is an honor to speak on behalf of the most extraordinary collection of financial debt assembled since the Reagan era—the Harvard Medical School Class of 2005. By some estimates, the amount our class owes the federal government is about the same as what the federal government owes the European Union. So in the spirit of patriotism I'd like to propose that the United States deploy the Class of 2005 to Ibiza and the Riviera, and we'll just call it even.

On this day, you will be tempted to offer us congratulations. But the fact that we will be walking across this stage testifies to one truth, and one truth only: that none of us graduating today possessed the dedication, the creativity, the persistence, or the strength of character it would have taken to flunk out of Harvard once it let us in.

After four years of study, I have learned the following: that most adolescents in pediatric clinics have more active sex lives than I do; that surgeons might not know what an organ does, but they aren't afraid to take it out; that PowerPoint is the most efficient way to make a presentation—because it saved

our professors the trouble of thinking about their lectures and us the trouble of remembering them; that we will struggle for years to attain a white coat the same length as the one the guy from food service receives immediately; and that there is no situation in the hospital so hopeless that a Harvard medical student can't make it worse.

You probably think that you're here today to celebrate us, but we think that we're actually here to celebrate *you*—the family and faculty who got us to graduation. My parents, brother, and sister are here from Chicago—which my Harvard professors tell me is a small city located somewhere in California.

My father is an internist who still loves going to the office after 40 years in practice. Like many of the physician-parents in the audience, Dad was mildly horrified that his child decided to go to medical school in the current health care climate; but he and my mother—the best teacher I know—have always supported our right to make our own mistakes.

Since they'll be watching this on video, I want to say the following to my grandparents: if you'd had one-quarter of the opportunities that you and my parents struggled to give me, you'd have been standing on this stage 60 years ago. So I'd like to take this chance to thank my family, and all the families here, who worked so hard to give us the choices we've had. And for those of you who were able to pay your child's tuition outright: I hope you feel good about having purchased an education instead of, say, the Cayman Islands.

Great teaching often occurs when no one is

watching, with no expectation of recognition or reward, which is precisely why I'd like to mention a few of the faculty who were tremendously kind to me. Academy-Award style, let me briefly thank the following: my surgical mentors—David Soybel, Ronald Bleday, and Richard Hodin—as well as Nancy Oriol '79, Allan Goroll '72, Gordon Strewler, Jr. '71, Julian Seifter, and Cindi McDermott. I'd also like to thank the surgeon-in-chief at Brigham and Women's Hospital, Michael Jeffrey Zinner, who made time to meet with us every week when we were third years; and Charles McCabe, a surgeon who trained one-third of my class and probably one-half of the residents in this audience.

And I am particularly delighted that our graduation speaker is Atul Gawande '94, who, in addition to being a busy surgeon and elegant writer, found time to encourage me to pursue my interests in surgery and international medicine. We're aware that our mentors could have been spending more time with their patients, their families, or their research. Instead, they chose to spend some of it with us; we are profoundly grateful, and we promise not to tell their department chairs.

Perhaps the most extraordinary contribution to our education, however, came from the thousands of patients who allowed us to learn from them so we could someday treat others. I'll never forget the elderly female patient who once told me: "You remind me of my husband. You don't look like anything like him, though. He was a very handsome man."

But there were serious lessons, too, of course. From classmates like Kedar, Nupe, MaryCatherine, and Laura—whose work in clinics around the globe inspired my interest in international medicine—I learned the simple proposition that our neighbors in the world should be treated like neighbors. Because of their contributions, patients in Haiti, Guatemala, Africa, and Asia know that our country has far, far more to offer the world than guns, pharmaceuticals, and arrogance.

I have also learned that we may never match the intellectual accomplishments of our professors, but if we rigorously abstain from exercise, we might someday match their physiques.

But the most valuable lesson is the one my roommate learned while watching an anesthesiologist save someone's life during a code by injecting just the right medication—into a patient he thought was the patient next door. You can read about this incident in Atul Gawande's upcoming book, *Your Hospital Is Trying to Kill You*. The lesson is simple: in medicine, as in life, it's far more important to be lucky than to be good.

My friends and classmates, we've spent the last four, five, or—in some cases—thirty seven difficult years of our lives studying to get good, and not one of us graduating today can effectively treat lower back pain. So as we move forward into our residencies, let us resolve to take the focus off getting good and concentrate instead on getting lucky. ■

Gregory Feldman '05 is a resident in general surgery in the Stanford University Programs.





HMS PRIZ

The following medical degree recipients graduated with honors or special awards:

Francis Joseph Alenghat
James Talbert Shipley Prize for excellence and accomplishment in research: *Global Cytoskeletal Control of Mechano-transduction in Kidney Epithelial Cells*

Oni Jahi Blackstock, Uché Abebe Blackstock, Karimi Grace Mailutha, Alanna Amyre Morris, Enyinnaya Rose Nwaneri, and Hien Thanh Tran
The Multiculturalism Award to the senior in each academic society who

Class

I pledge, by all that I hold most sacred, to uphold this oath to the best of my ability and judgment.

To My Patients:

*I vow to care for those in need and strive to alleviate suffering.
I will care for a human being, not simply treat a disease.
I will deliver the highest quality medical care possible to all of my patients.
I will remember that medicine is both an art and an ever-evolving science in which warmth, honesty, and understanding complement the surgeon's knife and the chemist's drug.
I will empower my patients to make sound decisions for their health and well-being.
I will recognize the importance of my patients' spiritual beliefs and social situations.
I will respect my patients' dignity and autonomy, both in living and in dying.
I will honor and protect the confidences entrusted to me.*

To My Community:

*I embrace my duty to strengthen our society.
I will work to promote health and prevent disease.
I will pursue equality and justice in the delivery of health care.
I will strive to overcome the social, economic, and environmental problems impacting the health of my patients.
I will be aware of my actions and behaviors, knowing that as a physician I will be a role model to those around me.*

To My Colleagues:

*I promise to maintain the integrity and traditions of my profession.
I will respect the wisdom of my teachers and share this knowledge with my students.
I will build upon and advance the art and science of medicine with honesty, kindness, and dignity.
I will respect and collaborate with my fellow health care practitioners in order to provide the highest standards of patient care.
I will not be ashamed to say, "I do not know," and will call upon others when needed for my patients' well-being.*

To Myself:

*I remain ever mindful of the high ideals for which I chose to dedicate myself to medicine.
I will ensure that the health of my patients is my priority.
I will remain alert and competent by constantly improving my knowledge and skills.
I will keep watch that my ambition and curiosity serve my patients and not my ego.
I will recognize my limitations with humility.
I will maintain and invest in my own health and well-being so that I may best fulfill my responsibilities.*

With the support of family, friends, and colleagues, I bear these responsibilities for the service of humanity.

Dean

Today, you stand before family, friends, teachers, and colleagues as newly appointed physicians. For two thousand five hundred years, since the time of Hippocrates, doctors have taken an oath to affirm a commitment to their profession. This oath has served as both a tribute to their teachers and a contract with their community. I now invite you, as a class, to articulate the ideals and principles that will guide you in your journey as physicians.

ES & AWARDS

has done the most to exemplify and/or promote the spirit and practice of multiculturalism and diversity

Eduarda Angel Borquez

Society for Academic Emergency Medicine Award to a senior medical student who has demonstrated excellence in the specialty of emergency medicine

Martin Damien Burke

Henry Asbury Christian Award for notable scholarship in studies or research: *Generating Diverse Skeletons of Small Molecules Combinatorially*

Ann Lee Chang

The Leonard Tow Humanism in Medicine Award presented by The Arnold P. Gold Foundation to a graduating medical student who consistently demonstrates compassion and empathy in the delivery of care to patients

Andrew Eugene Hermann Elia

Kurt Isselbacher Prize to the senior demonstrating humanitarian values and dedication to science; Leon Reznick Memorial Prize for excellence and accomplishment in research: *The Molecular Basis for Phosphodependent Substrate Targeting and Regulation of Plks by the Polo-Box Domain*

Laretta Erhunmwunsee, magna cum laude
Regulation of Lodybird Homeobox Gene Lbx1 by Pox3 and Sox11

Christina Wilbert Fidkawski, cum laude
Endothelialized Microvasculature Based on a Biodegradable Elastomer

Hannah K. Galvin

The New England Pediatric Society Prize to the senior who, in the opinion of peers and faculty, best exemplifies those qualities one looks for in a pediatrician

Grant Edward Garrigues, cum laude
Osteolysis and Aseptic Loosening of Joint Arthroplasty: Gene Expression in Cell-Biomaterial Interactions

Jeremy Alan Greene

Richard C. Cobot Prize for the best paper on medical education or medical history: *Therapeutic Infidelities: "Noncompliance" Enters the Medical Literature, 1955-1975*

Reena Gupta

Robert H. Ebert Primary Care Achievement Award for excellence and outstanding accomplishments in the field of primary care medicine

Catherine Jean Livingston, cum laude
A Comparative Survey of Physicians' and Herbalists' Perspectives on the Use, Safety, Quality, Clinical Practice, and Regulation of Herbal Therapies and Dietary Supplements in New South Wales, Australia

Shana Erin McCarmack

magna cum laude
Neural Correlates of Sleepiness: A Functional Magnetic Resonance Imaging Study of Sleep Deprivation and Sleep Inertia

Gabrielle Page-Wilson, cum laude
Prolactin-Induced GnRH Suppression: Insight into the Mechanism of Lactational Amenorrhea

David Edward Rosow, cum laude
Sonic Hedgehog: An Initiator, Maintenance Factor, and Potential Therapeutic Target in Pancreatic Cancer

Sarah LaBree Russell

Bemy Jelin '91 Prize to that senior who most demonstrates overall academic excellence with a career interest in pediatrics, oncology, international health, or psychiatry

Joel Dov Sawady

The Community Service Award to the senior who has done the most to exemplify and/or promote the spirit and practice of community service

Jashua Marc Shulman, summa cum laude
Genetic Modifiers of Neurodegeneration in a Drosophila Model of Tauopathy; Dr. Sirgoy Songer for excellence and accomplishment in research, clinical investigation, or scholarship in psychiatry

Parmanand Singh

The Gerold S. Foster Award in recognition of contributions to the student body by virtue of serving on a student-faculty committee, including, but not limited to, the Committee on Admission

Kurt Arnold Smith, cum laude
Adaptation of the Human Circadian Pacemaker to Prior Photoc History

Annemarie Stroustrup Smith, magna cum laude
*Fetal Magnetic Resonance Imaging in the Antenatal Diagnosis of Congenital Anomalies; PASTEUR Award presented to a graduating medical student whose work best exemplifies clinical investigation that has resulted in a published paper or one accepted for publication: *MR Imaging of the Fetal Skull, Face, and Neck**

Vladimir Vinarsky, magna cum laude
Matrix Metalloproteinases and Tissue Inhibitor of Metalloproteinases in Newt Limb Regeneration

Nikhil Wagle, cum laude
The Role of Replication Protein CDC6 in DNA Damage Checkpoint Activation

Sierra Maripasa Li'en Washington
Rose Seegol Prize for the best paper on the relation of the medical profession to the community: *PEPFAR in Zambia: The Rapid Scale-up of Anti-Retroviral Therapy in Lusaka, Zambia*

Benjamin Alden White, cum laude
Creation of an Evolutionary Matrix to Measure the Quality and Cost of Short-Term Medical Missions

Susan Xiuqing Zhao, magna cum laude
Suppression of Calcium-Induced Cardiac Electrical Instability as a Basis for Nitroglycerin's Antifibrillatory Action

Hao Zhu, magna cum laude
James Tolbert Shipley Prize for excellence and accomplishment in research: *A Functional Analysis of Hematopoiesis and Vasculogenesis in Zebrafish Using a *lmo2-EGFP* Transgenic System*





listening
with our

EYES

Technologically correct medicine cannot trump the primacy of the bond between physicians and patients.

BY CHARLES W. FRANK

I arrived at medical school motivated to learn how to care for patients and left filled with the notion that redemption lay, at a minimum, in the worlds of specialty medicine and allied research. Worthy as these paths are, I ended up choosing another: that of the clinician-teacher within the world of adult primary care medicine. My own journey along that clinical path has spoken to the moving, difficult, and sustaining reality of caring for—and learning from—patients.



There are countless instances when a glance signals THE EMOTIONAL PIVOTAL WHICH MUST BE SEIZED BECAUSE

When Anatole Broyard, described in *The New Yorker* as that “famously prickly book critic for the *New York Times*,” wrote about his struggle with prostate cancer, he described what he sought in a doctor: “one who is a close reader of illness and a good critic of medicine...but a bit of a metaphysician too...[one who is able to] imagine the aloneness of the critically ill. I want him to be my Virgil, leading me through my purgatory or inferno, pointing out the sights as we go.”

A guide. Given the oft-cited root meaning of “doctor” as “teacher” and “patient” as “sufferer,” the details of that commingled journey reflect the cadence of each—a rhythm at times synchronous, at times chaotic, but at all times undeniably a joint pilgrimage. Rita Charon ’78, an English scholar and professor of internal medicine, speaks of physicians as “gatekeepers to the land of the living.” She reminds us of author Susan Sontag’s view that there is “the kingdom of the well” and “the kingdom of the sick” and that “everyone who is born holds dual citizenship.” According to Sontag, “Illness is the night-side of life, a more onerous citizenship,” and physicians—because we know about that territory—are the guides for those who travel in the kingdom of the sick.

The psychoanalyst Michael Balint reminds us that the physician and patient are coauthors of a single story, jointly constructed. We are, after all, wired for stories, which demand to be heard. The beginning student of medicine soon learns how real and deep this need is.

As Broyard puts it: “The patient has to start by treating his illness, not as a disaster...but as a narrative, a story. Stories are antibodies against illness and pain.” In our patients’ world, eliciting and understanding their stories lies at the core of what Charon calls narrative medicine. To be proficient here, Charon tells us, requires the “narrative competence...to recognize, absorb, interpret, and be moved by the stories one

hears or reads.” This expertise “gives the doctor not only the means to understand the patient, but fresh means to understand the disease itself.” The reality is, in Charon’s words, that “scientifically competent medicine alone cannot help a patient grapple with loss of health or find meaning in suffering.”

The argument is not, of course, about the insistence—by society as well as ourselves—that we must be scientifically skilled. As physicians, we must learn to manage common occurrences uncommonly well and to recognize and triage the cannot-miss items in medicine filled with their own potential for severe morbidity and death. The demand here is the ear for another dimension, a recognition of the nonverbal, the acceptance of a redirected agenda that may appear unexpectedly.

Many years ago, after a long office visit with a patient who happened to be a physician, I said, “We’ve talked about many things, but before we proceed to the exam, is there anything else we ought to discuss?”

“Yes,” was the reply after a fleeting pause, “I’ve been thinking about suicide.” And so our session had now really begun.

The dramatic elements of this story aside, there are countless instances when a glance, a moment’s hesitancy, perhaps a tear, signals the emotional, pivotal moment in the clinical interview, which must be seized because it may never return. I like the late C. Roland Christensen’s teaching point: “Listening is an audiovisual exercise”—which he nestled in the Swiss proverb that claims: “If you shut one eye, you do not hear everything.”

Abraham Verghese, a talented physician-writer, reminds us that “as physicians, most of us become involved in the stories of our patients’ lives. Sometimes we are simply witnesses....But often we become players....” He tells a story, taken from Troyat’s biography of the writer

and physician Anton Chekhov, which illustrates this clearly. In the final days of his life, before he died young of tuberculosis, Chekhov traveled to a spa near the Black Forest in Germany. As his condition deteriorated, he sought the care of the spa physician, Dr. S.:

The windows were wide open, but [Chekhov] could not stop panting; his temples were bathed in sweat. Dr. S. arrived at two o’clock. When Chekhov saw him, he sat up, leaned back against the pillows, and, in a final reflex of courtesy, mastered his weak German and said, “I am dying.” Dr. S. immediately gave him a camphor injection, but his heart failed to react. He was about to send for an oxygen pillow when Chekhov, lucid to the end, protested in a broken voice, “What’s the use? Before it arrives, I’ll be a corpse.” So Dr. S. sent for a bottle of champagne. When it came, Chekhov took a glass and, turning to Olga [his wife], said with a smile, “It’s been so long since I’ve had champagne.” He emptied the glass slowly and lay down on his left side. A few moments later he stopped breathing. He had passed from life to death with characteristic simplicity.

What an extraordinary act! We could parse its meaning on many levels, not the least of which is the challenge of caring for physicians given our collective need for control, our refined sense of denial, and our ease of self-diagnosis and treatment.

In the context of a broader picture, however, the care of the dying represents in its own intimacy an opportunity for the richest expression of what we do as physicians. It is a time to bring to bear our best skills in the service of pain relief and the preservation of dignity. It is a time to recognize suffering as physician Eric Cassell has so persuasively

a moment's hesitancy, perhaps a tear, MOMENT in the clinical interview, IT MAY NEVER RETURN.

written we must. It is a time when the physician as therapist trumps the physician as therapist: when the most powerful form of our communication with patients finds expression in simply being there, in giving witness. And, it is a privileged reality to see the power of the love of others surround this suffering and help to ease it.

The fundamental transaction between patient and physician is represented by communication rooted in sharing, listening, and the reconciliation of different agendas. How much evidence-submitted-in proof do we need to show that when this doesn't occur, trouble and disaffection follow?

These are not new points, but we have fashioned a pernicious mismatch in

which we proclaim that our students must appreciate the centrality of effective dialogue between patient and doctor, and then we place those students in a world in which this expression is unwelcome and suppressed. A world in which senior role models are often absent, and junior faculty and housestaff are forced to function in survival mode, which admits only to the facts. Context is nice, the argument goes, but functionally superfluous—or so it seems.

The template for effective relationships is clear: establish trust, be technically competent, listen for the story, be curious, care above all. I especially like this matter of bringing one's curiosity to the clinical transaction (I am reminded of Alan Gregg's observation that "A

good education should leave much to be desired"); if so, we ought to get about the business of measuring the curiosity titer in our students and in ourselves.

Faith Fitzgerald, a brilliant diagnostician and teacher, offers this reflection from her own experience as a young attending at San Francisco General Hospital. Determined to prove to housestaff inclined to focus on the "interesting" patients at morning rounds that there was no such thing as an uninteresting patient, Fitzgerald requested the chief resident to identify the dullest.

The resident selected an elderly woman who had been admitted to the hospital as an act of mercy because she had nowhere else to turn after eviction from her home. Gamely attempting to



“The REASONABLE MAN ADAPTS The unreasonable man Therefore, ALL PROGRESS DEPENDS

elicit some good stories at the patient's bedside, Fitzgerald found herself stymied by the old woman's monosyllabic answers. “Nothing, it seemed, had ever really happened to her,” Fitzgerald found herself on the verge of conceding. “She had lived a singularly unexciting life.” And then she asked the woman how long she had lived in San Francisco:

Years and years, she said.
Was she here for the earthquake?
No, she came after.
Where did she come from?
Ireland.
When did she come?
1912.
Had she ever been to a hospital before?
Once.
How did that happen?



Well, she had broken her arm.
How had she broken her arm?
A trunk fell on it.
A trunk?
Yes.
What kind of trunk?
A steamer trunk.
How did that happen?
The boat lurched.
The boat?
The boat that was carrying her to America.
Why did the boat lurch?
It hit the iceberg.

Now, the Review of Systems is nice, but when served up with a curiosity about the patient's world, it offers vital—indeed necessary—insight into the life-context of patients, as well as an opportunity to advance one's own understanding of the world. Where else, but from one's practice, can one learn: how to boil an egg? (from a chef); theories about black holes (from an astrophysicist); how to judge the competence of a bricklayer (from a foreman); how a string quartet can provide insight into the teaching of teamwork (from a violinist); and how the Great Depression played out in the steel mills of the Midwest (from a foundry worker)?

As one learns, history taking is an extended affair and over the years it reveals so much about the patient and about ourselves as well. These narratives help us recognize that which gives us joy in the practice of medicine.

In these stories we have seen joy, courage, pain, suffering, enlightenment, humility, poignancy, loss, death, love, and privilege. All these narratives acquire their meaning from a broader context fashioned from the life journey of the patient and the caring physician. Context here is the coin of the realm.

Richard Weinberg made this point brilliantly in his story “The Laying On of Hands,” published over a decade ago.

It is a story about the diagnosis, treatment, and “salvage therapy” for his brother's aggressive lymphoma—and about Weinberg's increasingly frenetic attempts to help in his care from a distance. In this context Weinberg began to have chest pain for which he sought increasing amounts of corridor consultation: an after-hours negative exercise test courtesy of a weighed-upon cardiac fellow, a self-ordered chest film read as showing a mediastinum perhaps a bit generous in size, and finally making his own peripheral smear—the artifacts of which yielded leukemia-flavored panic.

His chest pain escalated and dominated his world until, at last, he sought out a well-respected clinician, a Dr. Davidson. This doctor was not, in Weinberg's words, “a rising star” in the department, but the go-to physician when illness struck. Davidson quickly agreed to see Weinberg in his office where the “whole sorry tale of [his] chest pain and [his] brother's illness” was revealed. The rest of the history was elicited and the exam completed when Weinberg, while getting dressed, with heart pounding and mouth dry, asked of Davidson:

“Do we need any tests?”
“No, I'd say you've done a pretty good job of that.”
“Then you know what's wrong?”
“Yes, I think I do.”
“Is it lymphoma?” I choked out, fearing the worst.
“No, your lymph nodes feel normal to me and given the way you've been poking at them, it's no wonder they're a bit tender.”
“My heart...”
“Your heart is fine.”
“Ulcer...?”
“No.”
“Are you telling me that I'm imagining all of this?”
“No. The pain is real.”

HIMSELF to the world. persists in trying to adapt the world to himself. ON THE UNREASONABLE MAN."

"Then what's wrong with me?
What's causing the pain?" I
demanded.

"You have heartache."

"Heartache?" The word struck me
like a slap to the face.

Davidson went on to explain: "Your brother is seriously ill. You are his best friend, and you've served as his personal physician as well. You've helped guide him to the best treatment, comforted him during the tough times, and given him the strength to go on. You've had to be strong for him and for your family. Now things don't look so good, you know the prognosis of his condition, and you fear what is to come. But no one really understands how much it all hurts you. You love your brother very much, and so you feel his pain in your heart." At that, Weinberg wrote, "Tears streamed down my cheeks. I could not speak."

This extraordinary story illustrates the need to understand context, derived from the balanced assessment of a patient, an assessment wonderfully formulated and permissive of the beginning of healing and the beginning of the disappearance of Weinberg's pain.

As powerful as all these narratives are, I hear—no, I *feel*—the expected push-back: No time to do this. Nice views from another time and place. How many times has this message about the primacy of the relationship between patient and physician been made from the pulpits of HMS? How can one reconcile such a fundamental message with the reality of clinical medicine as currently experienced? Where is the *Time to Heal* that Kenneth Ludmerer's extraordinary book has challenged us to restore?

It would be disingenuous to offer a simple answer. It is possible however, to think of our own arenas of influence and to commit to change. And it is possible to coalesce those change efforts with other kindred spirits for the sake

of preserving what we feel is at the core of effective doctoring, of preserving the kind of caring for the patient we would seek for those close to us as well as ourselves. Technologically correct care that is contextually wrong must stop.

What does this mean for us as practitioners and as teachers? What can we achieve in our domain? Preserve, as HMS Professor of Social Psychology Elliot Mishler puts it, the Voice of the Lifeworld as well as the Voice of Medicine, which are the essential elements for healing. Hear, acknowledge, and value this Voice of the Patient. As poet and physician William Carlos Williams observed in his autobiography: "I lost myself in the very properties of their minds: for the moment at least I actually became them, whoever they should be."

To preserve the patient's voice we need to define, among other things, a new form for the medical record. Physician William Donnelly suggests that, "If patient-centered medicine is to become a widespread reality in academic medical centers, educational initiatives must include reform of the medical record"—a record, he argues, that must pay written attention to the person and perspective of the patient throughout the course of medical care.

Teach focused communication skills in all specialties so that the voice of the patient is expressed and heard. Seek the voice of the team and allow its expression. Speak with the nurses. Find the student or house officer caring for your patient and make it a point to bring him or her to the bedside, especially if an emotionally laden message needs discussion. Recalibrate the context of care being delivered and insist that the perspective of illness be honored. Medical ethicist Kathryn Hunter reminds us that, "The practice of medicine is an interpretive activity." Let's make it so.

The continued dissolution of the patient/physician relationship erodes

our ability to care for the sick. Speak to the issue of: No time to do this today! Usurp the objections and speak to them. We should take George Bernard Shaw's challenge to heart: "The reasonable man adapts himself to the world. The unreasonable man persists in trying to adapt the world to himself. Therefore, all progress depends on the unreasonable man."

We can operate within our own spheres of influence and, on a good day, pick a bigger windmill to tilt against. The declaration of William James, Class of 1869, fits well: "I will act as if what I do makes a difference."

Let us renew ourselves by reaffirming the fundamental joy that brought us to medicine in the first place. Help the medical young to see within our responsibilities an unparalleled opportunity for personal and professional growth, as well as the chance, as Rita Charon writes, to "glimpse the nobility, the strength, [and] the tenacity of our fellow human beings." We cannot let the core elements of doctoring lapse; too much is at stake. Rather, let's commit in our work to sustain the passion of caring rooted in the message offered by Mother Teresa: "We can do no great things, only small things with great love." ■

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TRUTH & CONSEQUENCES

On the heels of selective reporting of data by pharmaceutical companies, a medical editor calls for transparency in clinical trials.

BY JEFFREY M. DRAZEN

Patients enroll in clinical trials as altruistic volunteers hoping to contribute to the understanding or treatment of disease. In the past few years we have seen some trial sponsors, especially commercial sponsors, selectively releasing information from these trials to cast their products in an undeservedly favorable light. Without a check on this impulse, medicine risks losing the trust of the volunteers who are essential to clinical research. The best way to retain their trust is to have all clinical trials registered upon inception, in a public database.

Because all medicine is taught by example, let's examine the story of a class of compounds meant to selectively inhibit the metabolism of arachidonic acid. This essential fatty acid is found esterified to membrane phospholipids contained in many foods, such as the butter you spread on your toast this morning. In an appropriately activated cell, enzymes act on these phospholipids to liberate arachidonic acid into the cellular microenvironment.

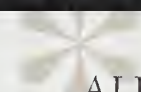
Several decades ago we learned that the arachidonic acid so released was transformed into thromboxanes and prostaglandins. We also learned that aspirin and nonsteroidal anti-inflammatory

drugs, or NSAIDs, inhibited what was then thought to be a single enzyme, termed cyclooxygenase (or COX), that was responsible for the first step in that transformation. These insights helped explain why aspirin and NSAIDs are powerful medicines: they inhibit the production of the end products of arachidonic acid cyclooxygenation that cause inflammation and pain. These insights also explained why these drugs have many side effects; they also inhibit formation of the beneficial products of arachidonic acid metabolism.

By the late 1980s, we had learned that the COX story was more complex than we had originally thought. The key obser-

vation was that there was more than one form of COX. The first form, COX-1, was thought to be the housekeeping form, responsible for the everyday activities of the body's chemistry, helping, for example, to maintain a mucus layer on some surfaces and enhancing microcirculation in some tissues. The second form of the enzyme, COX-2, was believed to be the source of inflammation in arthritis; it was the "bad guy."

It seemed reasonable that if we could selectively inhibit this second form of COX, we could stop the bad guy while preserving the housekeeping functions of COX-1. This meant that it would be theoretically possible to develop an arthritis pain reliever that didn't cause gastrointestinal side effects. By the early 1990s the drug companies had taken up the challenge and had developed selective inhibitors of COX-2. These drugs were originally approved on the basis of their ability to control arthritis pain, but the real prize was to show a better gastrointestinal safety profile than standard NSAIDs. Two companies launched a series of clinical trials hoping to prove that their drugs lessened arthritic pain without causing gastrointestinal side effects. After the trials were completed in 2000, the companies raced to get the



ALUMNI DAY
2005



By 2004, the pharmaceutical industry worth of COX-2 inhibitors per year. In a single day, the sales of these compounds ALL THE STUDENTS NOW ENROLLED AT

information to the Food and Drug Administration (FDA), in hopes that the FDA would allow them to claim enhanced gastrointestinal safety.

The first trial, known as the CLASS (Celecoxib Long Term Arthritis Safety Study) trial, was published in the *Journal of the American Medical Association (JAMA)*. In this paper the authors hoped to show that Pfizer's drug celecoxib, or Celebrex, could inhibit arthritis pain without generating gastrointestinal side effects. The primary outcome specified in the trial was ulcer complications. In the trial data, the reported difference in the frequency of these complications between celecoxib and the older agents could have occurred by chance nine times out of a hundred. When the trial sponsors submitted a report on the study to JAMA, though, they expanded the data set to include both symptomatic ulcers and ulcer complications, thereby shifting the statistical odds to two out of a hundred, a ratio more favorable to their claims.

Patients were enrolled in the trial for a year, but the researchers submitting the trial told JAMA's editors about only the first six months of results, which is what JAMA published. A later examination of data from the full year revealed that even the small benefit of reduced symptomatic ulcers and ulcer complications had evaporated by the end of 12 months. After FDA officials reviewed the celecoxib data, they refused to allow the manufacturer to advertise the drug's absence of gastrointestinal side effects, because the proportion of subjects experiencing these side effects from celecoxib did not differ all that much from the proportion who suffered such side effects while receiving standard treatment.

In the meantime, the researchers were also tracking cardiac events, and at six months they found no difference between the two study groups. That point is relevant to another trial, one that the *New England Journal of Medicine (NEJM)* published a few months later, in November

2000. The design for the VIGOR (Vioxx Gastrointestinal Outcomes Research) trial of Merck's drug rofecoxib, or Vioxx, resembled that of the CLASS study. Yet the VIGOR trial had two critical differences: control patients took only naproxen instead of either of two different drugs, and Merck barred anyone on low-dose aspirin from the trial, thereby decreasing the possibility of gastrointestinal side effects in the rofecoxib group but enhancing the possibility of seeing cardiovascular side effects.

In this trial, the good news was that rofecoxib produced fewer gastrointestinal side effects than naproxen. But researchers also made an unexpected observation: three to four times as many heart attacks occurred in the active-treatment group as in the comparison group. The rates were low—there were few events in either group—but the *proportion* was higher. This information raised some concern about the possibility of cardiovascular complications with rofecoxib, but since the signal was unexpected, the data were gathered in a fashion that did not allow firm conclusions about cardiovascular risk to be drawn.

In August 2001, about nine months after the VIGOR trial was published, JAMA published a meta-analysis looking at the CLASS trial, the VIGOR trial, and a large placebo group from a third trial. The investigators used data from CLASS and VIGOR, made publicly available on an FDA website, that included additional events that were not reported in the original journal articles. This meta-analysis found an increased frequency of cardiovascular events in the two groups taking COX-2 inhibitors. Their analysis came to the same conclusion: the drugs could cause heart problems, but the exact nature of the risks was not known with certainty.

The FDA then asked Merck to conduct a trial to demonstrate the cardiovascular safety of rofecoxib, but allowed Merck to continue to sell the drug. More

than four years would pass before the data from that trial became available. In the meantime, both Pfizer and Merck launched massive campaigns to market their drugs as safe and effective.

To produce the initial data on celecoxib and rofecoxib for the CLASS and VIGOR trials, approximately 13,000 people had volunteered to be study participants, presumably because they believed their information would be used impartially in clinical decision-making. Yet the trials' sponsors selectively filtered what they told the public. In the CLASS trial, they showed only the positive data from the first six months. In the VIGOR trial, cardiovascular events that occurred after the prespecified cutoff interval for adverse events were reported to the FDA but were not part of the article submitted to *NEJM*.

How rapidly should Merck have reacted to this cardiovascular signal? Although missteps are always clearer in hindsight, it is still fair to ask: What force was guiding clinical trial design and implementation? Merck made the decision to market its drug vigorously while awaiting the results of a trial the company knew would take four years to complete. In half that time Merck could have designed and completed a trial in patients with arthritis who were also at high risk for cardiovascular disease. The company would have had its answer in 2002 rather than 2004. Was this delay fair to the patients who had volunteered to participate in the VIGOR trial—or to the millions of people purchasing Merck's product?

Consider the following analogy. If I smelled smoke in my kitchen as I was leaving for work in the morning, I would not ask my neighbor to watch for a fire, I would look for the source of the smoke. The behavior of Pfizer and Merck resembled that of a homeowner who smelled smoke and said, "Well, I don't see a fire. I think I'll go to work." Rather than investigate the potential problem further, they marketed their drugs relentlessly.

was selling **\$5 BILLION**
amount of money that collective
generated would have paid the tuition of
HARVARD MEDICAL SCHOOL.

They were so successful that by 2004, when Merck withdrew its drug from the market, the pharmaceutical industry was selling \$5 billion worth of COX 2 inhibitors per year. To put that number in perspective, consider that, in a single day, the amount of money that collective sales of these compounds generated would have paid the tuition of all the students now enrolled at Harvard Medical School. The drug manufacturers were making enormous amounts of money, thanks largely to advertising that tended to focus on the potential for decreased gastrointestinal side effects and did not mention the possible cardiovascular risks.

The companies also began to pursue a secondary agenda: both drugs were involved in trials to prevent colon cancer. Pfizer gave its drug to the National Cancer Institute (NCI), which in turn sponsored the APC (Adenoma Prevention with Celecoxib) trial. Merck undertook its own trial, called APPROVe (Adenomatous Polyp Prevention on Vioxx), which sought to determine whether rofecoxib would decrease the number of future polyps in patients who had already had one colonic polyp. Both companies were trying to create new markets for their drugs.

But in September 2004, when an early data analysis from APPROVe suggested a cardiovascular problem, Merck pulled rofecoxib from the market. At this point the company met its responsibility to the trial participants. These volunteers had taken a risk to participate in the trials, and now Merck was making public the information gathered from them. I think the company should be acknowledged for taking that action.

The NCI investigators then looked more closely at their celecoxib trial, because they had not been doing extensive cardiovascular monitoring. They convened an external panel of reviewers, who reexamined all the data in the Pfizer-NCI colon polyp trial and found

an increased incidence of cardiovascular events. The NCI halted the trial.

In September 2004, following Merck's withdrawal of Vioxx, I asked, as editor in-chief of NEJM, the authors of the APC and APPROVe trials to send us their cardiovascular safety data, because health care professionals needed to know the whole story. This was information one could not get by reading the *New York Times* or browsing the companies' websites.

We worked hard to get these data sets on the cardiovascular side effects observed in the APC and APPROVe trials. We had a deadline, in that the FDA had already scheduled an advisory committee meeting on these drugs. We wanted to have the papers out to both the public and the committee members before they met in February 2005.

The data in these papers were unnerving. In the APC trial, the one the NCI sponsored and later stopped because of enhanced cardiovascular risk, two to three times more cardiovascular events occurred in the active treatment groups than in the placebo groups. The APPROVe trial showed a twofold increase in cardiovascular events related to thrombosis, which substantiated the results reported in the VIGOR paper and placed the risk analysis on much firmer scientific grounds.

We distributed our papers to the FDA advisory committee members the day before their meeting. At the meeting the Pfizer representatives made a presentation that failed to mention the APC trial, despite our earlier data distribution. When asked about their omission, the Pfizer representatives claimed they could not present the NCI data because they did not own the data.

Was this fair to the people who participated in the trial? How can Merck or Pfizer or any drug company hope to convince people to enroll in clinical trials if the potential participants suspect that the companies will make public only the favorable data? Patients put themselves



at risk in clinical trials mostly because they are altruistic; after all, standard care is always a choice. They are hoping, perhaps, to achieve a better outcome for themselves, but in many trials, they are not even offered that possibility. The only way we can convince patients to continue to make such a sacrifice is by assuring them that if they participate, their data will contribute to a decision-making process that is untainted by profit motives.

For altruistic patients to continue to participate in clinical trials, they must know that the rules of the game are public. They must know that their data are part of the public record. As the editor of a major medical journal, I have decided that starting this fall we will not publish papers from clinical trials that are not registered in a public database. Had the VIGOR trial been registered in a trial registry at inception, for instance, the editors of NEJM would have known that the cutoff date for adverse events was set to be a month before the cutoff date for the gastrointestinal outcome.

I urge physicians who help enroll patients in clinical trials to refuse to participate in trials that are not registered. Together we can ensure that the altruism of clinical trial participants is fully recognized and rewarded. ■

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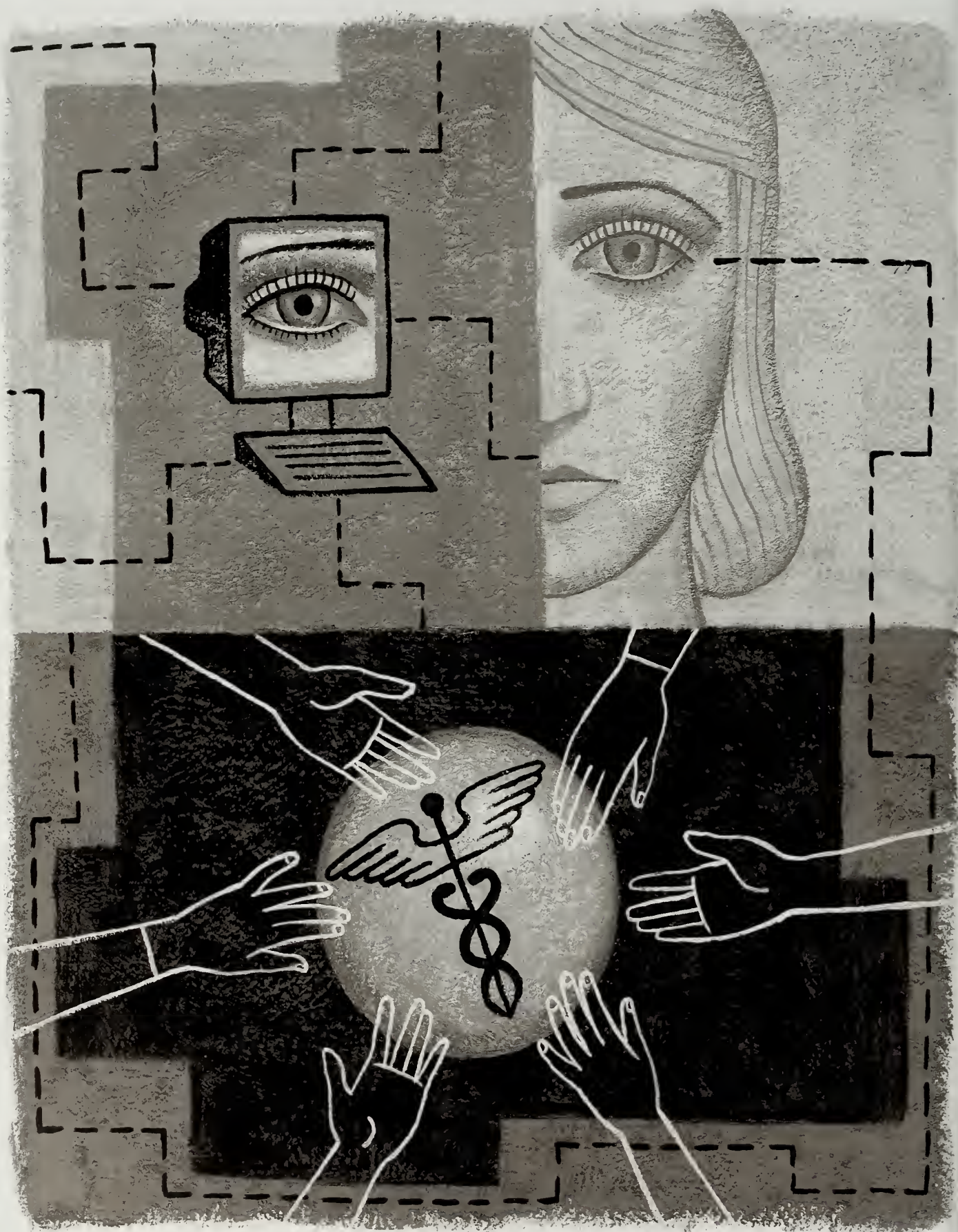


ILLUSTRATION: JAMES STEINER'S "COURTESY OF THE PINK ROOM"

The DATA GAME

A physician-journalist explores the impact of the evolution of media on the public's access to medical information.

BY TIMOTHY JOHNSON

Three weeks before my graduation from medical school in the spring of 1969, I wandered down to the student lounge to catch the evening news. The broadcast I watched, the "Huntley-Brinkley Report," happened to carry a story from Chicago in which the American Medical Association (AMA) had, earlier in the day, held a press conference to announce its opposition to the proposed appointment of a Boston physician, John Knowles, to become undersecretary of health. The association objected to Knowles because he was too liberal in his views on health care. He was advocating something called "universal health care," which at the time were terribly dirty words in Chicago.

A tremendous amount of information has been developed some not, to SATISFY THE number of news outlets now have for information,

Now had the AMA held auditions to find the worst possible spokesperson for their cause, they could not have done better than the ancient trustee they thrust before the cameras to read a prepared statement. After he finished, the press began asking him questions, and he became so flustered that his handlers had to lead him off the stage. And when they cut back to Huntley and Brinkley, the two newscasters were laughing so hard at this inept performance that they had to take a commercial break to regain their composure.

The very next morning I found in my school mailbox a form letter inviting me to join the AMA as an about-to-be new doctor. In the most impulsive moment of my life, I grabbed a pen and wrote on the letter something like, "If what I saw on the news last night is any indication of your policy, I do not care to join. Thank you." And I dropped the letter in the mailbox, never expecting to hear another word.

To my utter astonishment, about three weeks later, I received a long personal response from the executive director of the AMA detailing his opposition to Knowles. By now I was intrigued with the subject so, again on impulse, I sent the letter off to Knowles with a cover note saying, "Here's what I'm hearing. I thought you might be interested." He wrote back and we became pen pals.

At one point in our correspondence Knowles wrote, "If you ever come to Boston, look me up, and we'll get to know each other," which is what we did. At that time he happened to be part of a large group of people, mostly from Harvard, who were taking over the operation of the ABC station in Boston in the spring of 1972. One day he asked me to consider hosting a half-hour morning program for the public, which I did each day before going to work at the hospital. That's how my career in television journalism began.

Worlds Collide

In the 1940s and 1950s, the worlds of medicine and media had almost nothing to do with each other. The world of medicine gazed at the world of media with a kind of lofty arrogance, and the world of media regarded the world of medicine with a distant respect and even awe. But in the 1960s, some entertainment programs started to portray the world of medicine through the lives of physicians. "Marcus Welby, MD" was a top-rated television program from 1969 to 1976. The kindly doctor solved every medical problem in 28 minutes, never got ruffled, and never handed a bill to the patient. Who wouldn't want a doctor like that?

More important, at about the same time, the news divisions of local stations and networks began to realize that the public had an appetite for health and medical information. Surveys in the early 1970s consistently ranked medicine and health either first or second on the list of topics of interest.

Just at the time I was entering this world, the news divisions of all the networks and the local stations were starting to cover medicine. Of course, we know what happened from that point on: these two worlds, which had previously paid so little attention to each other, began engaging in a dance with great interest and even vigor.

That interaction served the public on many levels. I can't prove that what we do in the media benefits the public in terms of the ultimate goal, which is to change health behavior. But I would like to think that we play a significant role in trying to present information that is accurate, helpful, and understandable.

Information Overload

Since I entered the world of journalism full time more than 20 years ago, we have witnessed revolutions in the

worlds of medicine and media. The world of media has seen an extraordinary fragmentation in the sources of information to be conveyed to the public. When I joined ABC News full time in 1984, the three existing networks—ABC, CBS, and NBC—claimed 90 percent of the viewing audience at 6:30 in the evening for the news programs.

Nowadays in that time slot, those three networks—along with CNN and Fox—capture approximately 40 percent of everyone watching television. The rest are, of course, watching cable, and many people are not watching at all; they're getting their information from the Internet.

This fragmentation of the world of media in just the past two decades has produced a splintering effect that has led to some dangerous phenomena. The frantic competition among news organizations has put the pressure on to be first and, we hope, right, but certainly to be first. I shudder at what I see happening around me. I can control what I do, but I can't control much else, even at ABC, although I certainly have a voice there.

In addition, a tremendous amount of information has been developed from all kinds of sources, some valid, some not, to satisfy the voracious appetite that the large number of news outlets now have for information, especially about health. As a journalist, I find it annoying. As a physician, I find it frightening. And as a consumer, I find it worrisome to see the enormous amount of information that is streaming to us from all sources.

Unpatrolled Borders

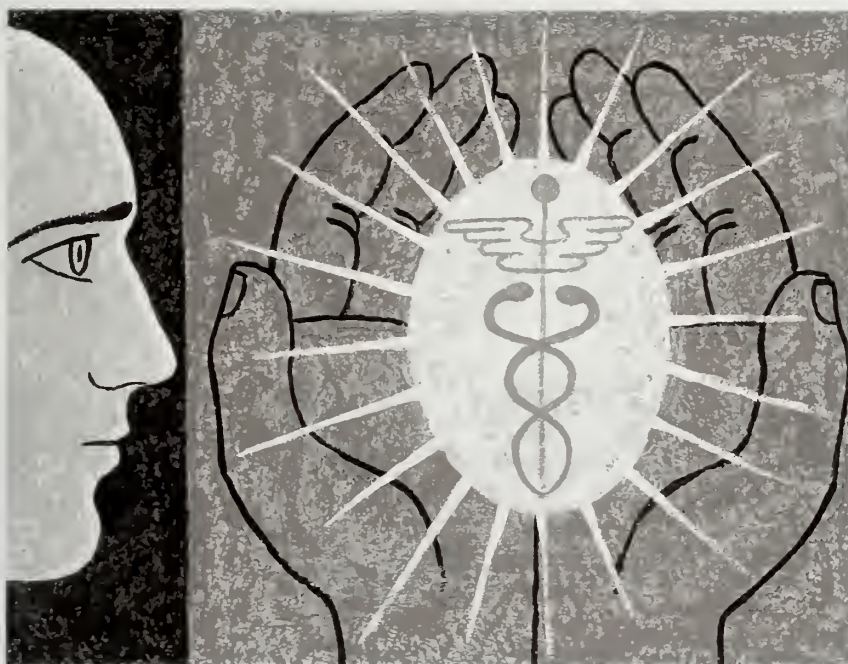
Twenty years ago, the flow of medical information was well controlled by the so-called establishment. Medical researchers would carefully present their findings to the journals. The journals would process this information thoughtfully and, when they believed

from all kinds of sources, some valid,
VORACIOUS APPETITE that the large
especially about health.

it was ready for physician consumption, they would publish it. Members of the media would all observe the embargo dates and rules. And the public would not receive the information until it had been carefully massaged through that process.

We face a difficult time in which the gatekeepers and the processes that served us so well for so long have broken down. Now underlying both sides of the medicine/media equation are philosophical questions that have always intrigued me: Who owns medical infor-

press and the public square. We will see a continuing tension between those who are trying to retain ownership of medical information within the establishment—and the ability to control its release to the public—and those who are demanding that medical information be available instantly.



Today, of course, information flows to the public from all kinds of sources, with little care devoted to its processing. And so journalists and physicians alike face a critical challenge in trying to keep the information orderly, honest, and useful.

All of this, of course, has led to an enormous increase in the potential for conflicts of interest on both sides of the medicine/media equation. On the side of the media, frightening cases have arisen of journalists hoping to promote their own careers, scheming to obtain news in illegitimate ways, and trying to present information before it's been thoughtfully processed.

mation? Who has the ultimate right to decide when it should be presented to the public—presumably the ultimate beneficiaries of medical information, both good and bad?

For years, the medical establishment or the government that financed so much of the research was thought to own that information, and the data were processed carefully. But many would argue that careful processing also had a downside in that it kept timely information from the public. These critics would argue that medical data should belong to the public and its representatives. And those representatives—for better or for worse—are the

Perilous Surf

The big catch phrase in the world of the media today is VoD, or Video-on-Demand. Everyone is scrambling to figure out how to build databanks of information that individual consumers can access immediately through whatever electronic means available when they decide they want to know something.

Many members of the media are predicting that, within the next decade, television will no longer carry scheduled programming. We will not be able to tune in at a certain time even to see the evening news. Any time we want any kind of information, whether it's the news in general or medical reports in particular, we will simply flick on our computers or BlackBerries or whatever devices we will have by then. We will punch in the subject and receive an immediate download of multiple sources reporting on that particular topic. And that's how we will stay updated throughout the day.

If you think we have problems controlling the flow of information now, consider what it will be like in that brave new world when it's instant, downloadable news all day long, seven days a week. That will be the future of information dissemination about health and medicine—something for us all to ponder. ■

Timothy Johnson, MD, is the medical editor at ABC News, the founding editor of the Harvard Medical School Health Letter, and co-editor of the Harvard Medical School Health Letter Book.

MAP of the

The dean of HMS explains how a world newly flattened by technology

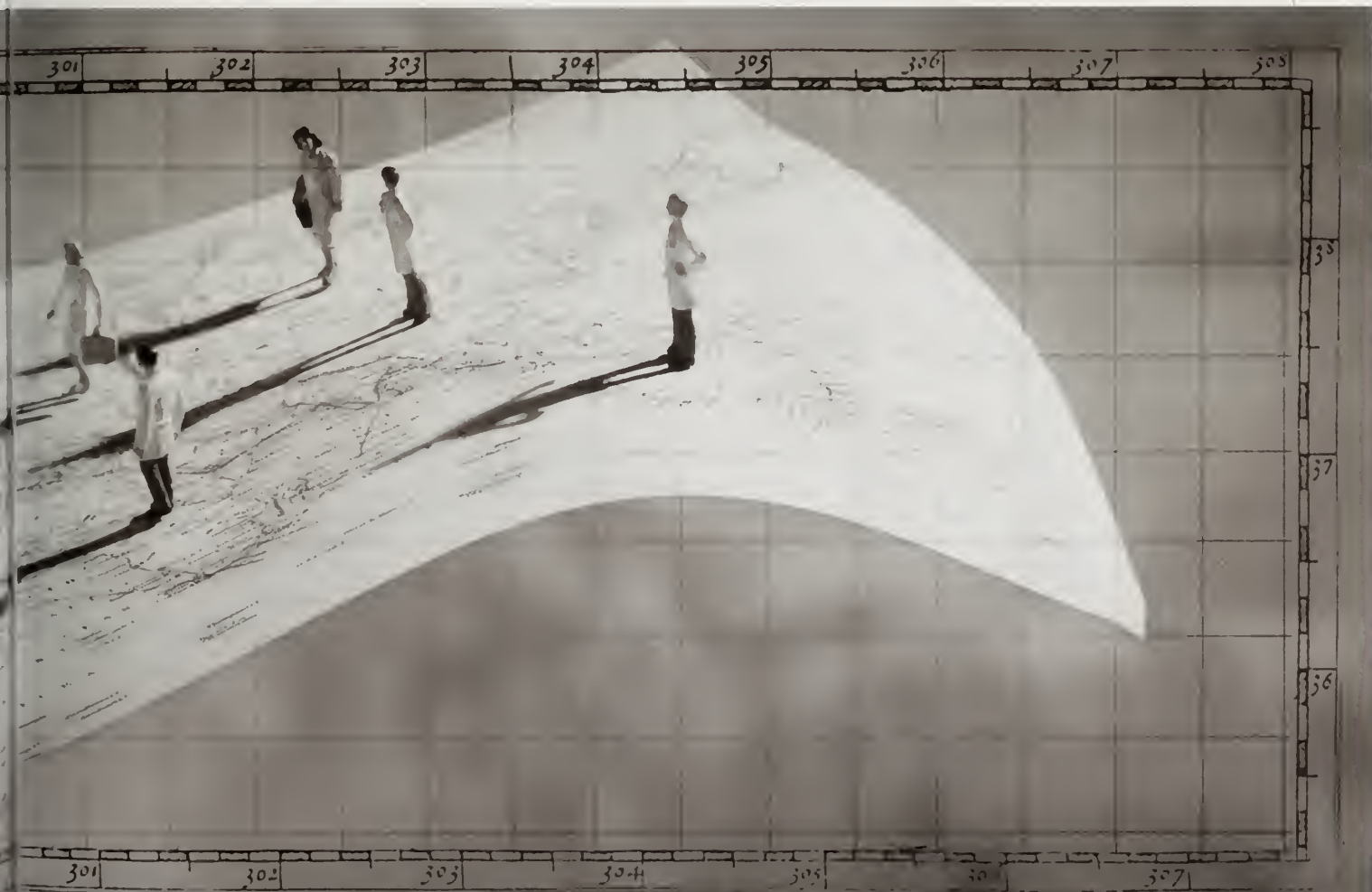
Each winter, my colleagues in the dean's office join the chairs of Harvard Medical School's clinical and basic science departments for a weekend retreat on Cape Cod. As I prepared for this year's meeting, I reflected on the changes that have occurred, over the course of the eight years of my tenure as dean, in the relationships binding the entities that compose the broad



WORLD

is giving rise to fresh dimensions in medicine. BY JOSEPH B. MARTIN

community we call Harvard Medicine. Complexity is a way of life at HMS, and it drives the way we connect with one another. At the retreat, I considered the non-traditional and, indeed, sometimes enigmatic nature of our relationships, particularly as they speak to the governance and strategic planning issues across our community.



The FLATTENING OF OUR COMMUNITY

major impact on the many collaborations that have emerged, both locally and

My recent reading of *The World Is Flat: A Brief History of the Twenty-first Century*, by New York Times foreign affairs columnist Thomas Friedman, reinforced my notion of the complicated interrelationships underpinning the HMS community. Friedman analyzes brilliantly the complexity of international relations, particularly in the business and educational venues that have emerged in the wake of the technological revolution, the Internet, and 24/7 financial transactions.

This "flattening" of our world has had a profound impact on the way we conduct our international business affairs. Outsourcing, insourcing, the juggling of trade deficits, and offshore economic arrangements have each resulted in new constructs in the relationships between business, government, and educational entities throughout the world.

Friedman uses the example of Dell, now the world's largest computer company, to illustrate this principle. Dell sells between 140,000 and 150,000 computers each day, and the success of the company depends on worldwide transactions and delivery routes. But there is more to it than that. Research teams in Texas and Taiwan collaborate on the design of new products and the modifications of existing products. Ten countries—particularly China, Malaysia, Korea, Japan, and Taiwan—produce the individual components. Production quotas, quality control, and shipments for computers all occur with just-in-time delivery in a 24/7/365 world.

In another example, Friedman describes the origins of Jet Blue, the economy airline headquartered in Salt Lake City. There, nationwide flight reservations are managed by a group of Mormon mothers working from home. Friedman compares this example of the good use of interconnectedness to Osama bin Laden's exploitation of similar mechanisms to create a network of terrorists intent on destroying the ordinary machinery of the Western world.

In both instances, the structures of success and of destruction have depended on harnessing the power of the Internet to coordinate activities that have led to a remaking of our world.

These examples provide an opportunity for considering the ways that HMS and its companion institutions relate to one another. These interactions now include new collaborations with other faculties at Harvard University—especially the Harvard School of Public Health—and with MIT. The networking with our hospitals forms a structure that has been flattened in a comparable way—on the whole for the better. How has this come about?

Virtuous Realities

When I arrived as dean in 1997, I realized that a major initiative in information technology would be essential to ensure connectivity within the broad Harvard medical community. We established a new system for community interchange through our eCommons intranet, carried out a \$28 million renovation of the Countway Library of Medicine to make it fully digital and wireless, and established new messaging systems, which permit me to send instant emails to more than 14,000 people at a time.

The impact of all of this technology on the community is that emails have largely replaced telephone calls, resulting in enormous efficiencies. The paper trail in my office has virtually dried up. Our entire medical school curriculum is now online, accessible to our students in Chile, Tanzania, Peru, and Russia.

The success of the digital renovation of the library has been accompanied by a remarkable 50 percent reduction in the onsite usage by our students and faculty. Many of the features of the digital library are now accessible to any member of our academic community—students, faculty, and staff—from their computers anywhere in the world. A single login name

and password can provide access to more than 800 journals online, and we use Google to search for information that in the past would have taken days or weeks to find.

Taught in the Web

Working with Griffin Weber, a recent MD-PhD graduate, John Halamka, HMS associate dean for educational technology, has developed an important asset called MyCourses. This Web portal allows the assembling of material for lectures and the transfer of information to what, in the recent past, would have been the syllabus.

The MyCourses database contains more than 250,000 items. Our faculty can easily access material on fields ranging from histology to pathology, and from pharmacology to physiology, as well as on clinical cases. They can use the latest information to modify their lectures and tutorials. MyCourses also allows them to incorporate animation as a learning tool.

In addition, we can now provide timely assessments of our students' performances with rapid grading and appropriate commentary that provides confidential information to the dean's office. The students, in turn, can offer instant evaluations of lectures and other faculty activities, providing important feedback on the quality of their education. Already students, faculty, and staff access the MyCourses website 18,000 times daily—and the number keeps growing.

Collaborative Efforts

The expansion of our education activities has extended to new programs within the School and in collaboration with other faculties at Harvard and MIT. We recently established, for example, an MD MBA program designed to create a meaningful interface between medicine and business. This program

has also had a
new clinical
internationally.

entitles students, after five years of study, to earn joint degrees.

We have also, in our doctoral programs, established exciting new opportunities in chemical biology and in systems biology—the new physiology—to allow students to enter from a common, single portal in applying to Harvard University. Following acceptance, the students can then decide which specific track they wish to pursue. They can choose among 11 programs, ranging from biophysics to systems biology to chemical biology to neuroscience. We have also established a new MD-PhD program in the social sciences.

We are now celebrating the 35th anniversary of the MIT-Harvard Health Sciences and Technology program. We have just completed a program review, which attests to the remarkable success of its graduates, more than 80 percent of whom have assumed important academic appointments.

Dream Teams

The flattening of the HMS community has also had a major impact on the many new clinical collaborations that have emerged, both locally and internationally. In addition, it has required us to develop new mechanisms for trans-system collaboration and research.

The first of these was the Dana Farber/Harvard Cancer Center, now in its seventh year. Through this initiative, more than 800 investigators from a dozen of our institutions have developed new research interactions not dreamed of ten years ago. One of the outstanding results of this collaboration has been the awarding of seven Specialized Programs of Research Excellence, or SPOR, grants to investigators in search of an understanding of and treatments for cancers of the lung, kidney, breast, prostate, ovary, skin, and blood.

We have also established a Harvard-wide entity to seek understanding of neurodegenerative disorders and to col-

laborate with the recently emerging work in stem cells. With a focus on Alzheimer's disease, amyotrophic lateral sclerosis, Huntington's disease, and Parkinson's disease—and with the addition over the past two years of a new, international collaboration on multiple sclerosis—this group collaborates across eight of our hospital-based departments, through the network of investigators that compose the Harvard Center for Neurodegeneration and Repair, or HCNR.

One of the many exciting initiatives within the HCNR is the Laboratory for Drug Discovery in Neurodegeneration at Brigham and Women's Hospital. Headed by Peter Lansbury, the laboratory has taken on the challenge of identifying small molecules from the chemical biology laboratories to try to turn off some of the abnormal protein folding that is now known to be associated with neurodegenerative conditions.

Also contributing to the School's innovative efforts is the Broad Institute, a



All this connectivity has not only made our community the MOST SUCCESSFUL OF ITS KIND in the world, but it has also resulted in SEMINAL CHANGES



collaboration between Harvard and MIT that is composed of interdisciplinary researchers dedicated to developing tools for genomic medicine. These experts focus on the molecular basis of cancer; metabolic disorders, including diabetes, obesity, and heart disease; and inflammatory and infectious diseases.

The Harvard Stem Cell Institute also is providing innovation. Seven Harvard schools, seven teaching hospitals, and nearly a hundred scientists are banding together in this ambitious new institute, whose mission is simple: to use stem cells to help the 150 million people nationally living with or dying from five types of organ and tissue failure.

Remaking the Dean's List

All this connectivity has not only made our community the most successful of its kind in the world in education, research, and patient care, but it has also resulted in seminal changes in our day-to-day functions.

As the dean of the School, my first responsibilities are to the ten basic science departments on the Quad. These range from the basic science Departments of Genetics, Biological Chemistry, Cell Biology, Pathology, Neurobiology, Microbiology, and Systems Biology, to more clinically relevant efforts in Ambulatory Care and Prevention, Health Policy, and Social Medicine.

One of the challenges we face is that, increasingly, the faculty members in these departments hold doctorates rather than medical degrees. They possess extraordinary talent but often maintain a rather narrow focus. Inviting them to participate in the educational mission and assuring their contributions here has created challenges in the MD curriculum, although many of them clearly are actively engaged in teaching in the equally large PhD program.

Each of our 45 clinical departments has a jointly appointed chair who reports

only made our community the world in education, research, and patient care, but it IN OUR DAY-TO-DAY FUNCTIONS.

both to the dean and to a hospital head. One substantial effort we have undertaken in the past five years has been the establishment of a routine review of all our departments as a shared effort between the dean's office and the hospital leaders. We have reviewed 30 of the 55 departments over the past four years and have established a rotation that allows us to complete all of the reviews within a five- to seven-year period.

In my role as dean in this flattened community, I chair the Governance Committee of the Dana-Farber/Harvard Cancer Center, serve as president and chief executive officer of the Harvard Center for Neurodegeneration and Repair, and serve as chair of the board of Harvard Medical International, which works in nearly 30 countries worldwide. My responsibilities as dean only continue to evolve. I am president of the Massachusetts Biomedical Research Corporation, for example, which was the vehicle driving the state bond funding for the large expansion of the Charlestown campus of Massachusetts General Hospital. I also serve on the operating committee of the Broad Institute and, as a side matter, try to keep key stem cell researchers from moving to California.

Centers of Gravity

When we consider the governance of this flattened community, it becomes clear that conventional models of organization are no longer useful in determining our future directions. HMS is not a hub-and-spoke model. We have multiple hubs and multiple spokes. Nor is HMS a hierarchical model—no one individual is in charge.

Instead—and here I'm reverting to my inclinations as a neuroscientist—the HMS model is really a network, as in a neural network with multiple nodes of connectivity, each with its own center of gravity and focus yet interconnected in multiple and complicated ways with the other nodes. To an important degree,

much of the activity generated is self organized, not managed.

As we look forward to our continued work within this flattened community, how do we ensure that we are taking full advantage of our many opportunities and that we are adequately tackling our many challenges? One area of concern is the way we continue to close ranks without full cooperation around the issues of intellectual property, patents, and licensing. At a time when Boston is emerging as the country's most attractive venue for biotech and pharmaceutical companies and when the science of medicine is moving rapidly toward new opportunities in translational research, our current system is too disconnected and inefficient to do full justice to the broader relationships possible between academia and industry.

If a venture capitalist or a biotech company leader wishes to elicit the ideas of our faculty members, too often we are inaccessible and disconnected. Moreover, our ability to deliver on promises of such relationships has not improved greatly over the past decade.

We also face a major challenge with respect to the expansion of Harvard University's academic community to the Allston campus. Despite three years of planning and the reporting of a science and technology committee about areas of focus and priority for that campus, we have yet to witness a sustained academic appreciation for and commitment to the opportunities there. As Harvard President Larry Summers has made clear, life sciences will form the principal focus of activities at that site, and unified graduate programs will evolve.

The goal, in part, for the Allston initiative is the development of new activities that connect the basic sciences of mathematics, physics, chemistry, and computer science with biology, but the details are still a long way from reality. In addition, the current plan to move part of the Harvard School of Public Health to the Allston campus may interrupt many

joint programs in such fields as epidemiology, biostatistics, and cancer biology.

Mission Control

As we approach the final planning stages for the School's new curriculum, we face another formidable challenge: how to identify best practices in education and share with our hospitals and clinical departments the responsibilities of paying for teaching and promoting faculty who do it well.

During the past 35 years our academic health centers have evolved through steady—even undisciplined—growth. The reality is that expanding this clinical enterprise has been critical to our ability to compete in the health care environment. Our faculty has grown eight- to tenfold since 1970. Our research enterprise also has followed a growth trajectory, with support from the burgeoning National Institutes of Health, the budget of which doubled between 1997 and 2003.

These marks of success have occurred with little increase in the number of our students. The annual number of students graduating with medical degrees has not changed in more than 25 years, and although our PhD programs have expanded considerably (graduates of the medical school and hospital laboratories make up fully 80 percent of Harvard University's total in biological sciences each year), the attention to educational issues has often been trumped by the focus on patient care and research.

At Harvard Medical School, our flattened world poses challenges that will continue to present major opportunities to fulfill our mission: to create and nurture a community of the best people committed to leadership in alleviating human suffering caused by disease. ■

Joseph B. Martin, MD, PhD, is the dean of Harvard Medical School as well as the Caroline Shields Walker Professor of Neurobiology and Clinical Neuroscience.



Reunion



1945

60th—1945 Edward Friedman

The Class of 1945's sixtieth reunion was blessed from the start with a beautiful day. Our final official reunion was attended by 40 of the 75 living members of the class. The high point of our weekend was Alumni Day when we had a class table for lunch and saw old friends. It was great talking with Sid Jackson, Tom Boles, and Tom Morgan well into the afternoon. Then, in the evening, at a sumptuous banquet in the Faculty Room of Gordon Hall where the steaks were thick and juicy, we had a wonderful chance to discuss politics with Joe Miller, our class member in the New Hampshire legislature.

Coffee accompanied a short business meeting and a moment of silence in memory of our departed classmates whose presence we sorely missed; the Class of 1945 has always been a close-knit group. Jack Parker announced that the class treasury would be able to fund a scholarship in our name. At the same time a suggestion to meet again as a class in two to three years was lobbed and met with approval. We will keep each other informed of this and other class affairs through a periodic newsletter, which I volunteered to coordinate.

On Saturday, although the participants were reduced in number, the class met for lunch at the Harvard Club to exchange final thoughts. Afterward, many went off to the Museum of Fine Arts or to other Boston attractions. It was a most satisfying reunion and left us looking forward to future get-togethers. ■

PHOTO: RICHARD WILCOX ST. D.O.

Reports



1950

55th—1950 Renée L. Gelman

The Class of 1950 held its 55th reunion in an atmosphere warmed by reencountering old friends. The Alumni Day ceremonies and, most importantly, the class picture, set the tone for the festivities. Although we missed our absent classmates, 40 people attended the dinner at the Downtown Harvard Club on Friday. The view, the weather, the conviviality, and the good wine and

food encouraged a Quaker-like meeting at which we shared old memories and remembered old friends.

Lunch at my Brookline house on Saturday was a repeat of our 50th reunion. Shel Levin brought the videos of our graduation 55 years ago, which we have viewed at every reunion. Despite the heat, we all enjoyed ourselves, and we departed hoping our 60th will be as successful. ■

1955

50th—1955 Mitchell Rabkin

Our reunion was almost magical, as if no time had intervened since graduation.

The congeniality began on Wednesday evening at the home of Roman and Ruth DeSanctis, with a welcoming buffet supper, a tradition they generously follow for each five-year gathering. After Thursday's activities on the Quadrangle, a gala dinner brought out record numbers to enjoy a welcome from Joe Martin, Dan Federman '53, and George Thibault '69; a moment of silence remembering classmates lost; then an excellent meal and exquisite views of the Charles River, Boston, and Cambridge from the Museum of Science Skyline Room.

Friday's alumni business meeting was special—81 percent of our living classmates contributed a record-setting sum, more than half a million dollars. The Class of 1955 established a permanent endowment fund for scholarship support; classmate Paul Prusky underscored its importance with the comment that the growing indebtedness of new graduates "can erode the very moral fiber of medicine."

A weekend at the Cliff House Resort in Ogunquit, Maine, capped the reunion, where each reflected on the good fortune that brought our class to Harvard Medical School and what that has meant over the subsequent half century. ■



1960

45th—1960 Joe Barr and Jane Schaller

Our reunion was enlivened by the presence of 40 classmates and more than 25 spouses and friends. We began on Wednesday evening with a reception at the Heritage on the Garden hosted by Dick Wurtman.

Thursday night we had a class dinner at the MIT Faculty Club, overlooking the Charles River. A moment of silence was observed for those who have left us since our last reunion—Al Larson, Clay Stenberg, John Bull, Jay Powers, Larry Sack, Jonathan Wirtschafter, Ben Gittes, and Mel Gelch. Classmates brought us up to date about their lives, families, and career changes, and, of course, they offered valuable thoughts and insights.

Friday morning was Alumni Day, featuring several excellent talks, including one about doctors communicating with patients, by Charles Hatem '66; one about the lessons learned from the COX-2 controversy, by Jeffrey Drazen '72,

editor in-chief of the *New England Journal of Medicine*; and one on medicine and the media, by Timothy Johnson, medical editor at ABC News.

After lunch we traveled to the Ocean Edge Resort in Brewster, Massachusetts, on Cape Cod. We had a lovely dinner there and greeted several classmates who could not attend the first couple of days. Sirgay Sanger entertained us with a tale of how his dog, Oliver, helped him connect with autistic children. One irreverent classmate wondered whether Oliver had billing numbers. On Saturday several of us played golf or tennis, perhaps not as skillfully as five years ago, but still with enthusiasm! A New England clambake and more after-dinner conversation brought the day to a close.

Brunch on the porch Sunday morning concluded our time together. Forty-five years have passed swiftly; many of us are still active in medicine and enjoying what we do. May we all be hale and hearty for our 50th reunion! ■





1965

40th—1965 Bruce Chabner

Approximately 30 classmates from the Class of 1965 returned to Boston on the weekend of June 10 for the formal medical school program as well as private festivities.

Attendees from Utah (William Barry), Florida (Kenneth Ratzan), Minnesota (Cecil Chally and Richard Aadalen), Michigan (Gilbert Omenn), Indiana (Herbert Adams), and other parts of the country, including many from the Northeast, gathered for dinner on Friday evening, June 10, at my home in Newton.

We reconvened for a clambake on Saturday at John McNamara's home in Brockton. What a great pleasure to see our good friends after many years. We

recognized voices instantly and faces within a few seconds, and we usually remembered names after a minute or two. We shared a lot about our lives, families, celebrations, and tragedies, and a bit about work, which seems to recede in importance as the years march along. Many are now retired, or retiring, and the rest of us working folks are curious about the adjustment. We lingered late into the evening, and afterward realized what a great bunch of people we were privileged to know at HMS.

Many thanks to those of the Boston crowd, including John McNamara and Clyde Crumpacker; Jean Hurd from the alumni office; and others too numerous to mention for making this possible ■



1970

35th—1970 John (Tony) Davies

Thirty-two classmates, including three from the dental school, gathered for our 35th reunion. The events flowed without a hitch, thanks to the able guidance of Jean Hurd from the alumni office and our class reunion committee. Special recognition again goes to Joan Goldberg and Peter Gross for editing our reunion book.

Thursday and Friday activities on the Quadrangle included symposia and alumni events. The Theatre Room at the Harvard Faculty Club in Cambridge was the venue for our well-attended dinner on Friday evening. Classmates and spouses enjoyed lively conversation during the social hour with wine, hors d'oeuvres, and a sumptuous buffet of salmon, chicken, and filet mignon. Although most classmates hailed from New England, others traveled from Guatemala, the Midwest, and the eastern seaboard. This was Luis Villa's first HMS reunion, which he attended with his wife and son from Miami.

Joan Goldberg and her husband, Fred, hosted the class for a lobster feast in the garden terrace of their Chestnut Hill home on Saturday. We sampled delicious cheeses and dips before dinner and desserts after the meal. Later we retired to their air-conditioned living room to view with a few chuckles Tony Breuer's video of the class during our medical school days; we have not changed one iota in 35 years! We were delighted to be joined by Dan Federman '53 and his wife, Betty.

Sunday brunch, attended by a select dozen, found us at the Jumbo Seafood restaurant in Newton sampling a great variety of tasty dim sum. The large, round table encouraged lively conversation, while the enthusiastic waiter presented more and more exotic dishes to satisfy our palates.

In another five years, perhaps more classmates will have retired and be able to attend our 40th reunion. We look forward to sharing experiences of activities and relaxation in retirement. ■

1975

30th—1975 Ramon Martin

We could all remember when, as medical students, we'd watch the alumni gather on the Quadrangle for Class Day and think: "They sure do look old." Thirty years out the tables have turned, and we observe the medical students sitting on the sidelines and remark at how young they seem.

Remembering was an important part of our reunion activities. Twenty-four members of the Class of 1975 participated. Henry Lerner, the class secretary, did an excellent job assembling the reunion book.

After the class photo on the Quadrangle, we gathered in the Minot Room of Countway Library for dinner. Each person received a copy of his or her initial class mug shot. We had a moment of silence after the reading of the names of

deceased classmates. During dinner, we raised a toast to the memory of Tom Wright, the grand administrator of Vanderbilt Hall during our days. We revisited a drawing of the medical area that he made and decided to reproduce it to make it available to all classmates. We also toasted, in her absence, the recently retired associate dean for alumni programs and special projects, Nora Necessian, wishing her good health and enjoyment. The evening's conversation was brought to a close when Countway shut down for the night.

We reconvened the following evening at the lovely home of Henry Lerner and Phyllis Scherr '84. The setting was perfect for a great meal and conversation. When we parted, we all agreed that we should not wait five more years for another gathering like this one. ■



1980

25th—1980 David Eisenberg and Lewis First

Although it was only 25 years ago that the Class of 1980 graduated on the Quad-rangle, for many of us it seemed more like a quarter of a century. That being said, more than 60 members of our infamous class—along with family members and friends—gathered for three unforgettable days to reminisce and update each other on what has happened since we were medical students.

Our weekend began with our symposium, during which time we learned that our class has quite the diversified portfolio; classmates spoke about cutting-edge research, clinical care innovations, patient and global health advocacy, and new directions in medical education.

We enjoyed two spectacular dinners, one held in the New Research Building

and the other featuring a unique 12-course banquet at a Chinese seafood restaurant in Newton, followed by a Saturday afternoon clambake at the home of Joanne Wilkinson and her family in Walpole.

Somehow between class photos and the presentation of our class gift on that Friday morning by Lynn McKinley-Grant and Hilda Hutcherson, we even managed to find time to watch scenes from our Second and Fourth Year shows, as well as from the Anatomy Awards we presented during our first year as students. While so much has changed on Longwood Avenue, it was wonderful to see the ties that bind our class together are tighter than ever. Thanks to all who helped with the planning of this great weekend. We look forward to seeing everyone at our 30th in 2010. ■





1985

20th—1985 Michael Myers

Members of the Class of 1985 came together in Boston to celebrate our 20th reunion on June 10 and 11. Janey Wiggs and Tim Martinez HSDM '85 helped to organize events (with lots of help from Jean Hurd in the alumni office). It was great to see folks from as far away as Puerto Rico, Texas, Indiana, and California, as well as classmates from Maine, Massachusetts, and New York.

On Friday night we enjoyed a cocktail reception in the New Research Building next to Vanderbilt Hall. Saturday's picnic on the Charles River was oppressively hot, but supportive

spouses ran for more soda and ice, the kids didn't melt down (too much), and everyone agreed to make a big push for our 25th reunion in 2010.

Some of the folks in attendance included Claire Bloom, Helen Hunt Bouscaren, Paulette Bryant-Lee, Joan Butters, Janet Chaikind, Ed Flores and Cristela Hernandez Flores, Sandy Jo Jones, Lisa Kaufman, Phil Lane, Ginat Wintermeyer Mirowski and Steve Wintermeyer, Connie Monitto, Lisa Petri Henske, Maury Smith, Linda Starace Colabella, Libby Stewart, Sharee Umpierre-Catinchi, Kathleen Welsh, Jennifer Yolles, SueJane Grosso Mancene, and Susan Zweig. ■



1990

15th—1990 Eileen Reynolds

On Friday, after the morning business meeting and symposium on communication in medicine, our class met for dinner at Davio's in Cambridge, where we had a beautiful view of the Charles River and the Boston skyline.

Tiron and Marie Pechet generously opened their Cambridge home for Saturday's afternoon picnic, where classmates enjoyed catching up on each other's careers and lives.

Thanks to all who helped organize the weekend, and we look forward to seeing each other again for our 20th reunion in 2010. ■

1995

10th—1995 Douglas Jutte

It was a classic hot and humid Boston summer weekend when our small but rowdy group from the Class of 1995 got together for our tenth reunion. If I may say so, the most striking thing about seeing old friends was how darned good everyone looked! Despite long years of residency and the many children scurrying about, no one seemed to have aged. Perhaps for HMS '95 the rumors are true, and 40 really will be the new 30!

The weekend began with a handful of hard-core reunion-goers at the Alumni Day activities (and free lunch) on the Quad—just in time to hear that our own Rodney Taylor was elected as secretary for the Harvard Medical Alumni Council. Apparently his popularity remains undiminished.

In the evening the class convened on Newbury Street in Back Bay for sangria and tasty tapas. It wasn't long before Marissa Howard-McNatt's infectious laugh was ringing through the restaurant. There we discovered that George Tolis's disdain for political correctness remains intact; that Chan Raut was carjacked at gunpoint in Houston; that Sarah Wood and Mark Rubenstein are both metrosexuals (yes, waxing is involved); that Keith

and Katherine Dunleavy had managed to leave all four of their children (yes, four) with Grandpa Kirby for the weekend; and that Monique Rainford has been working on her Jamaican accent—literally—in Kingston, where she now lives.

On Saturday we met at Larz Anderson Park in Brookline, where children could run amok while adults hid in the shade and chowed down on barbeque. Some fresh faces included Chris Antenucci, Emily Oken, Carol Cardinale, and Benny Gavi—all with one or more kids in tow. Among the many children present were the mildly disconcerting “mini-me” Julia (McHugh) Marine and Noah West; I've been reassured that no cloning was involved. For the barbeque stragglers, Michelle Finkel kindly opened her air-conditioned home and roof-deck where the evening wound down against the backdrop of the city skyline and the sounds of the nearby Theater District and Gay Pride Festival.

The weekend reminded us of Boston's charms, of old friends, and of the often difficult but certainly memorable years at HMS. For pictures of the weekend, email me at dpjutte@berkeley.edu. And as Susan Spratt would say, “See ya'll next time!” ■

2000

5th—2000 Sonia Batra

Our class celebrated its fifth reunion with a small but dedicated group of alumni, with several classmates making the effort to travel from out of state. Our class now spans the gamut from residents, fellows, and attendings to business people, although the majority of us are still completing training.

On Friday night, we enjoyed a decadent dinner at Maggiano's Little Italy in the Theater District. A miscalculation in the number of attendees—or perhaps a large number of no-shows (many of us are still on-call house staff in Boston)—left us far below our minimum food and beverage guarantee; we made up the difference with unforgettable fine wines (and several toasts to HMS!).

On Saturday, June 11, we braved the sweltering heat for a barbeque at Larz Anderson Park in Brookline. Although it took us some time to realize that all those familiar-looking people sharing the gazebo with us were in fact members of the Class of 1995 (and our former interns and residents during clinical rotations), our class had a respectable turnout. Our classmates introduced delightful new babies and children while we updated each other on our current job, marital, and life status.

The weekend provided a wonderful opportunity to reconnect with one another and reminisce about our memorable years at HMS, as well as catch up on all the adventures since. Hope to see everyone at the tenth! ■



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